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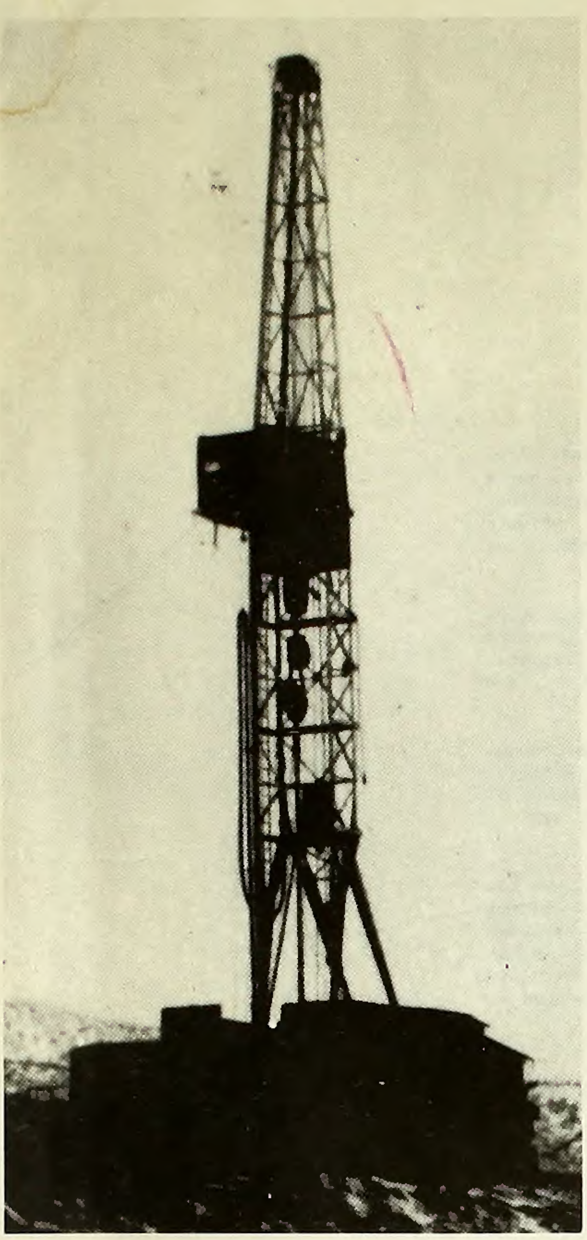
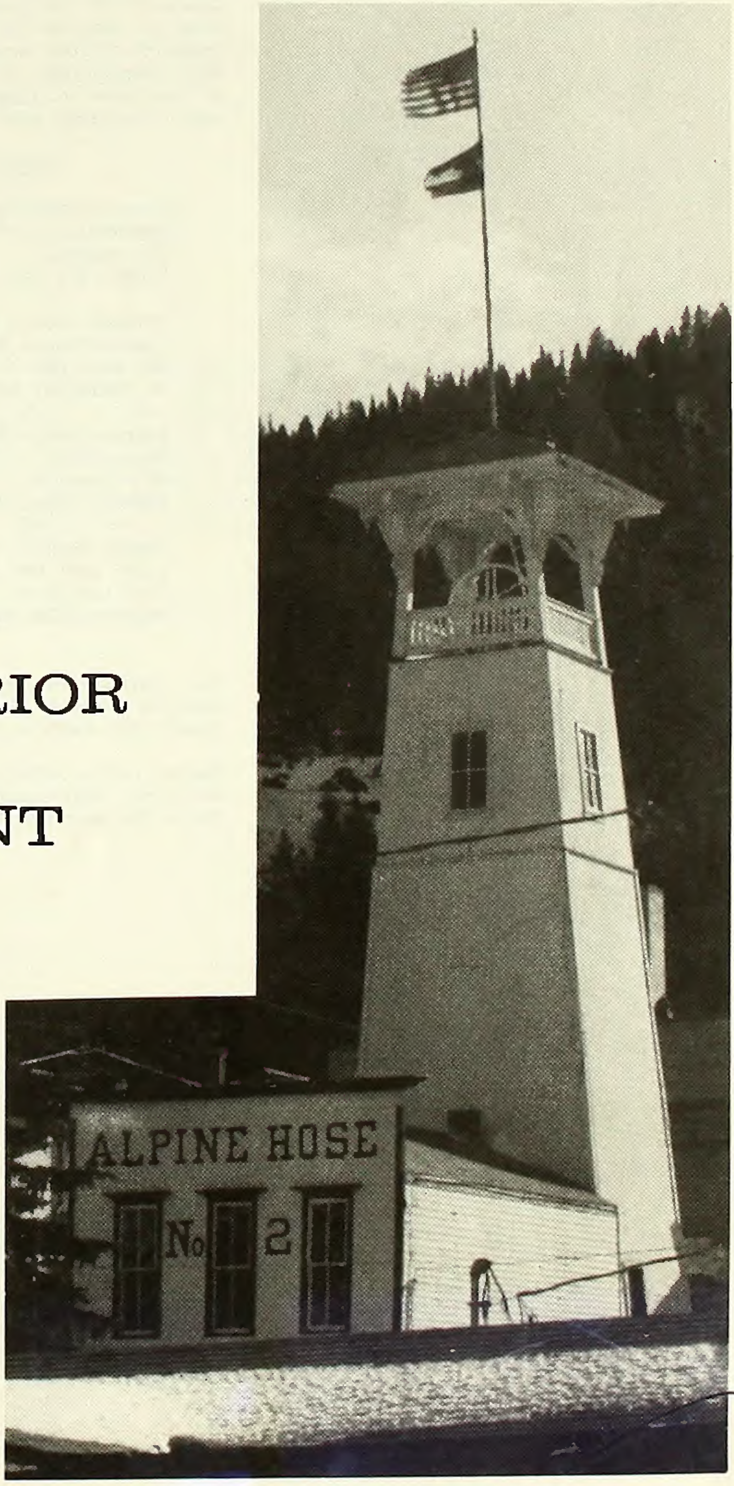
NORTHEAST RESOURCE AREA RESOURCE MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT





U. S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

CANON CITY DISTRICT

COLORADO

RECEIVED
APR 16 1984
Bureau of Land Management
Ely, Nevada

Notice to Reader,

This draft environmental impact statement on the Northeast Resource Area Resource Management Plan is for your review and comment. A team of resource specialists have contributed to the plan and this document. A significant amount of input from other federal, state, and local agencies; private organizations; and individuals has been useful throughout the process of developing this environmental impact statement.

Twenty nine land management issues are discussed and analyzed within this document. Although the major issue may be, what lands should be retained or disposed of, there are 28 other issues that must be considered. For instance; potential coal mining, oil and gas drilling, wildlife habitat protection, and firewood cutting are all important parts of the alternative plans.

As authorized by the National Environmental Policy Act (NEPA) several references to other documents are made in this EIS. They are all available at the District Office in Canon City or the Resource Area Office in Wheatridge. Copies of referenced material can be sent to requestors. A reproduction fee may be required.

Your comments are invited on the appropriateness of the alternatives and on the adequacy of the impact assessment. You are also invited to submit pertinent data or research information that may be of use. Please direct your written comments to the Area Manager, Northeast Resource Area, 10200 West 44th Avenue #222, Wheatridge, Colorado 80033. Written comments should be received by close of business on July 23, 1984. Oral and written comments will be accepted at public hearings scheduled below:

PLACE	DATE AND TIME
Elbert County Courthouse Annex Commissioners Hearing Room 221 Comanche Kiowa, Colorado	7:00 P.M. Monday June 4, 1984
Larimer County Courthouse Commissioners Hearing Room 200 West Oak Ft. Collins, Colorado	7:00 P.M. Tuesday June 5, 1984
Gilpin County Courthouse Court Room 203 Eureka Central City, Colorado	7:00 P.M. Wednesday June 6, 1984
Ramada Foothills 11595 West 6th Avenue (6th and Sims) Lakewood, Colorado	7:00 P.M. Thursday June 7, 1984

All comments on alternative appropriateness and impact assessment adequacy received on time will be evaluated and addressed in the final environmental impact statement on the proposed resource management plan.

Please retain this draft environmental impact statement for future reference as the final environmental impact statement will not duplicate this report. We intend to have the final environmental impact statement supplement this draft.

Sincerely yours,

Frank R. Young
Area Manager

I concur:
Donnie R. Sparks
District Manager

Bob Moore
Acting State Director

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RESOURCE MANAGEMENT PLAN

ENVIRONMENTAL IMPACT STATEMENT

Draft (X) Final ( )

NORTHEAST RESOURCE AREA, COLORADO
WHEATRIDGE, COLORADO

Lead Agency

U. S. Department of the Interior, Bureau of Land Management

Type of Action

Administrative (X) Legislative()

ABSTRACT

This draft environmental impact statement on the Northeast Resource Management Plan describes and analyzes five alternatives for managing the public lands and resources in the Northeast Resource Area. Alternative A is the present management continued. Alternatives B and C were developed to improve on the continuation of current management alternative. Alternative D is the outcome of initial analyses of the first 3 alternatives and public input. At this time Alternative E is the preferred alternative of the BLM, it was developed to meet the same resource goals of Alternative D but consolidate public land ownership for management and cost efficiency.

For further information regarding this environmental impact statement contact:

Frank Young, Area Manager
Bureau of Land Management
Northeast Resource Area
10200 West 44th Avenue #222
Wheatridge, Colorado 80033
Telephone: (303) 234-4988

Date by which Comments Must Be Received: July 23, 1984

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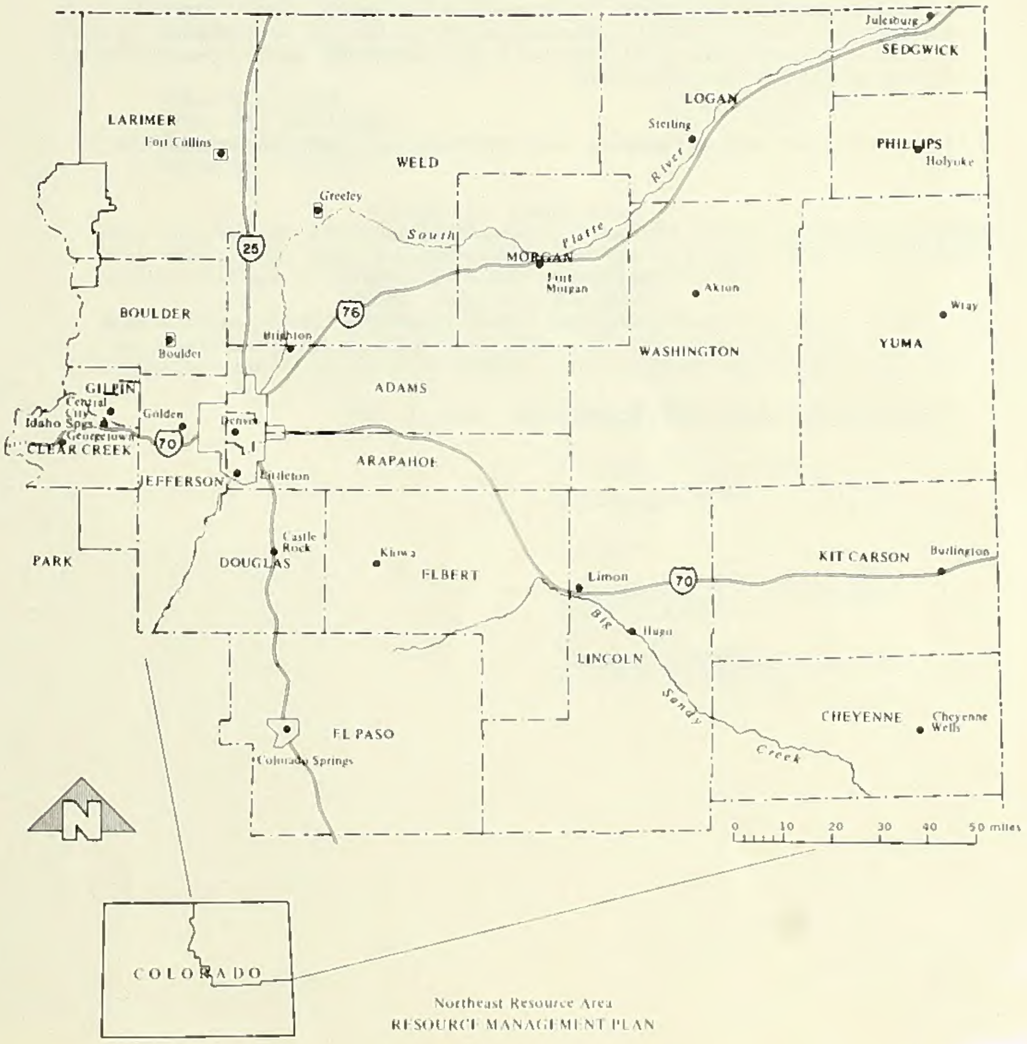


Northeast Resource Area
RESOURCE MANAGEMENT PLAN

Figure I - 1
LOCATION MAP

SUMMARY

Five multiple use Resource Management Plans for the Bureau of Land Management (BLM) administered lands and resources in the Northeast Resource Area, Colorado are presented in this Resource Management Plan/Environmental Impact Statement. The alternative plans are analyzed for their future benefits produced and resulting adverse impacts. The first purpose of this document is to present the mitigative measures that will be used to minimize the adverse impacts and identify one alternative plan as the BLM's preferred alternative. At this time Alternative E - No BLM Retention is preferred. The second is to gather public input on these so that a final plan can be chosen or developed.

The 5 alternatives produced benefits, resulting adverse impacts, and mitigation, in summary are:

A. CONTINUATION OF CURRENT MANAGEMENT (NO ACTION ALTERNATIVE)

This is the no action alternative required by the Council on Environmental Quality and because it describes the present situtation can be used for a base to compare other alternatives to. Under this plan, the current management approach would stay the same into the future.

Approximately 4700 acres would be disposed of to non-public entities and the BLM would continue to manage approximately 32,350 acres under the multiple use concept as per the Federal Land Policy and Management Act of 1976 (FLPMA). An additional 619,700 acres of subsurface mineral estate would be managed for mineral production in cooperation with the surface owners.

Access to public lands would continue at the present level, legal public access to approximately 7450 acres.

Wildlife habitat maintenance would continue on approximately 31,820 acres, and 26,210 acres of excellent and good potential habitat would be under federal or DOW control.

The forested land in the front range (approximately 17,640 acres) would continue to have limited harvest permitted (380 cords per year)

Water quality, floodplains, and water sources would be maintained. Soil erosion would be minimal.

Protection of valuable open space would not be pursued and 80 acres would be disposed of to non-public entities. A projected 2330 acres would likely have their scenic quality reduced slightly.

Recreational opportunities will remain nearly the same except on approximately 9180 acres where a loss of semi-primitive character would change to roaded natural.

Minerals development would continue under the highest alternative favorability for locatable, salable, oil and gas, and coal.

The largest amount of vegetation disturbance would occur under this alternative.

Expected management costs would increase 17% from previous years. This Cost is relatively equal to Alternatives B and D but higher than C or E.

B. MODERATE BLM RETENTION AND INCREASED RESPONSE TO ISSUES

This alternative was developed with the intention that the BLM initiate actions to provide the lands and resources for use as identified by issues and that other public agencies assume management of appropriate lands. The BLM would implement an increased level of projects, sales, leases, protection actions, and use supervision to satisfy the publics interests.

Approximately 3690 acres would be disposed of to non-public entities and 14,770 acres turned over to other appropriate public agencies. The BLM would increase multiple use mangement (FLPMA) on approximately 21,570 acres. Subsurface mineral responsibility would increase to approximately 620,110 acres in cooperation with the surface owners.

Access to public lands would be pursued to valuable tracts. Approximately 12,420 acres would become accessible to the public.

Wildlife habitat improvement would take place on 32,020 acres, and 25,740 acres of excellent and good potential habitat will be under federal or DOW control.

Timber and fuelwood management and harvesting would stay the same as the current situation. Approximately 17,640 acres would be available for harvesting and 380 cords per year would be sold.

Water quality, floodplains, and water sources would be maintained as under the current management alternative. Soil erosion would be the same as current management also.

Much of the valuable open space tracts in the front range would be protected (15,250 acres). Approximately 1030 valuable acres would be disposed of to non-public entities. Some 2250 acres would likely have their scenic quality reduced slightly.

Recreational opportunities will be slightly changed in character. Approximately 1640 acres of semi-primitive type land will be altered to roaded natural and 4590 acres of roaded natural character will become rural in character.

Minerals development would continue under high favorability for locatable minerals and coal. Salable, and oil and gas favorability for development would decrease by about 2 percent from current management.

Vegetative disturbance will probably be only slightly less than under current management.

Expected management costs would increase 18% from previous years. This cost is relatively equal to Alternatives A and D but higher than C or E.

C. LIMITED BLM RETENTION AND RESPONSE TO ISSUES

This alternative was developed with the intention that other public agencies manage lands that could be more efficiently managed by them as determined by location and interest. This alternative also designated non-public value lands for disposal by general open market sale. What limited public land (BLM) that remained would be managed much as under current management, Alternative A. One exception is Riverside Reservoir which would have the habitat for the endangered white pelican and other waterfowl improved.

Approximately 9620 acres would be transferred to other public agencies, 9130 acres would be put up for general sale, and 17,810 acres would, after specific review, be retained, transferred, or disposed of as determined appropriate. Only 3480 acres would remain administered by the BLM and most of that associated with Riverside Reservoir. Subsurface mineral estate acres would rise to 630,890.

Access to public lands would not be pursued and 240 acres with access would be disposed of leaving 7210 acres with legal access.

Approximately 23,480 acres of important wildlife habitat including other public agency disposal lands and specific review lands would be maintained, and 18,840 acres of excellent and good potential habitat will be under federal or DOW control.

The acres available for timber and fuelwood harvesting would be reduced to 13,780. The annual harvest would be reduced to 230 cords.

Water quality concern areas and floodplains would be partly disposed of, increasing the risk of degradation. All water sources would be protected. Soil erosion would be slightly reduced due to a small reduction in vegetative disturbance.

Valuable open space tracts would not be specifically protected and 1800 acres would be disposed of to non-public entities. The greatest degradation of scenic quality would occur under this alternative. Approximately 930 acres of high quality and 4180 acres of somewhat less quality would be degraded.

Recreational opportunities will be greatly reduced due to disposal and character changes. Approximately 8860 acres of semi-primitive character would change to roaded natural or rural and 5650 acres of roaded natural character would change to rural.

Minerals development would be less favorable for locatable minerals than any other alternative. Salable, coal, and oil and gas development favorability would rate equal to current management (highest of alternatives).

Vegetative disturbance would be tbe lowest of any alternative.

Expected management costs for the first 5 years would increase 7% from previous years, thereafter it would decrease by 3%. This would result in a cost savings for the BLM over Alternatives A, B, and D only.

D. LIMITED BLM RETENTION AND INCREASED RESPONSE TO ISSUES

This alternative was developed with the intention that other public agencies manage lands that could be more effectively managed by them as determined by resource values as well as by location and interest. In addition to general sale for many acres some non-public value lands were designated for sale to specific private interests. Public input was used to reevaluate many areas concerning public values and interest in specific tracts for status changes. The major difference from Alternative C is the BLM retention of a little more land and intensified multiple use management on these lands.

Approximately 10,810 acres would be transferred to other public agencies, 7550 acres would be put up for sale, and 16,700 acres would, after specific review, be retained, transferred, or disposed of as determined appropriate. Approximately 4980 acres would be retained by the BLM. Subsurface mineral management acres would increase to 628,200.

Access to public lands would increase to 8340 acres even with disposal of 80 acres with existing access.

BLM and other public agency lands where wildlife habitat would be maintained or improved total 26,580 acres, and 21,380 acres of excellent and good potential habitat will be under federal or DOW control.

Timber and fuelwood harvesting would be reduced to 257 cords per year from approximately 17,140 acres.

Water quality concern areas and floodplains would be partly disposed of, increasing the risk of degradation. All water sources would be protected. Soil erosion would be only slightly higher than Alternative C, but still quite low.

Valuable open space would be protected on 15,840 acres, but 440 valuable acres would be disposed of. Approximately 2570 acres would have their scenic quality reduced slightly.

Recreational opportunities would be similar to Alternative B (i.e. relatively little change).

Minerals development favorability would be reduced by 5% for locatable minerals and 2% for oil and gas. Salable and Coal would remain the same.

Vegetative disturbance would be just slightly higher than under Alternative C.

Expected management costs would increase 15% from previous years. This cost is relatively equal to Alternatives A and B but higher than C or E.

E. NO BLM RETENTION (PREFERRED ALTERNATIVE)

This alternative was developed to consolidate federal land management responsibility within the Resource Area. All surface lands with public value would be transferred or disposed of to public agencies. Non-public value lands would be disposed of to non-public entities.

The USFS would gain responsibility of 23,640 acres in the front range and the National Park Service 120 near Estes Park. State and local governments would acquire 8720 acres. General sale of the remaining 7550 acres would be initiated. The subsurface mineral estate under BLM administration would increase to 631,270 acres. Since other public agencies would be controlling management of all the lands that under Alternative D where to be retained or reviewed by the BLM little actual difference in impacts can be expected.

The USFS management might differ with regard to access (less would probably be pursued), open space (not specifically protected), and locatable minerals (their regulations are slightly less favorable for development). In general no significant management differences from Alternative D are expected.

Expected management costs for the first 5 years would increase 6% from previous years, thereafter it would decrease by 67%. This would result in a significant cost savings for the BLM particularly over the long term relative to all other alternatives.

CHAPTER I - INTRODUCTION

GENERAL DESCRIPTION OF THE RESOURCE AREA

The Northeast Resource Area planning region encompasses approximately one-quarter of the state of Colorado. This area is the most populous part of the state including the Front Range cities of Fort Collins, Boulder, Denver, and Colorado Springs (to mention only the larger four). It also includes the northeastern plains spreading out to Wyoming, Nebraska, and Kansas. All or part of 22 counties lie within the area.

The BLM administers approximately 40,030 acres (2860 acres are cooperatively managed by the USFS) making it the fourth largest land managing agency after the Forest Service, National Park Service, and the State of Colorado. By far the largest amount of land is privately owned. Several counties particularly along the Front Range own land, usually for recreation and open space.

The BLM also administers approximately 615,000 acres of subsurface estate (minerals) where the surface is non-federal. The minerals administered vary from coal only, oil and gas only, to all minerals and sometimes "other minerals" which generally represents a fractional interest or a combination of specific minerals.

This plan addresses only the 40,030 acres and 615,000 acres identified above.

Figure I-1 shows the location of the Northeast Resource Area and some basic geography. In addition, a foldout map of the area is included. This map shows the resource area divided into ten management zones. (numbered 1 through 10). This foldout map and corresponding zone maps 1,3, and 5 through 9 are found in one map section and show land ownership. These maps are frequently referred to hroughout this document.

The 10 management zones are:

1. The Denver Coal Basin located southeast of the city of Denver, northeast of Colorado Springs, and west of Limon. This area is almost entirely subsurface estate and mostly coal only. (See Zone Map 1)

2. The eastern plains south of the South Platte River and east of the Denver Coal Basin include a large amount of oil and gas subsurface estate and scattered small public land tracts. (See Resource Area Base Map)

3. The lower South Platte River zone extends from Greeley to Nebraska and includes public land associated with a number of irrigation reservoirs. It also includes an area north of Fort Collins where public land is again associated with irrigation reservoirs. (See Zone Maps: 3a,3b,3c,3d,3e,3f,3g)

4. This zone is similar to number 2 except it is north of the South Platte River. It includes the Pawnee Grasslands area. (See Resource Area Base Map)

5. The northern front range foothills are included in this zone and runs south from Wyoming to north of Boulder. It also includes a small area around Estes Park. (See Zone Maps: 5a, 5b)

6. The Ward-Gold Hill zone is located west of Boulder and includes mineralized lands in these areas. It also includes some public land along South Boulder Creek. (See Zone Map 6/7)

   This small zone lies southwest of Boulder and northeast of Central City and Blackhawk. (See Zone Map 6/7)

8. The 1-70 corridor best describes the location of this zone. It lies from 1/2 to 7 miles from the highway starting west of Golden and continuing west to Graymont. (See Zone Map 8)

9. The Evergreen zone lies southwest of Denver and includes a few small scattered parcels of public land, the public lands along the South Platte River near the town of South Platte, and scattered subsurface estate. (See Zone Map 9)

). This zone has little public land or subsurface estate but includes the highly populated urbanized front range corridor. (See Resource Area Base Map)

PURPOSE AND NEED

As required by the Federal Land Policy and Management Act of 1976 and Bureau of Land Management (BLM) planning regulations 43 CFR Part 1600 (Public Lands and Resources; Planning, Programming, and Budgeting) the BLM Northeast Resource Area is preparing a plan that will update its management direction for public land and subsurface estate. The plan will guide the resource management of approximately 40,030 acres of public land and 615,000 acres of subsurface estate within the Northeast Resource Area, Canon City District (Fig. I-1).

This draft environmental impact statement is intended to aid the decision maker in selecting an appropriate land use plan for the resource area. It is also intended to satisfy the Council on Environmental Quality regulations 40 CFR Part 1500, Federal Regulations for Implementing the National Environmental Policy Act of 1969. The Council on Environmental Quality regulations state "National Environmental Policy Act procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." The BLM's preferred plan (Alternative E) is identified for public comment. Changes will be published in the final environmental impact statement.

Five alternatives considered for managing the BLM administered lands and resources are described and analyzed in this document. The alternatives concentrate on significant issues that need to be addressed, principally which public land should BLM retain and what resources are most valuable and in need of improved management. The alternatives offer different choices for resolving the issues.

A formal plan is needed for the public lands and resources of this area of Colorado for many reasons, among which are:

1. Approximately 80% of the public land is within the heavily populated and growing "Front Range Urban Corridor" from Fort Collins to Colorado Springs which places high and conflicting demands on these lands. For all public land the issues are: first, which lands should be retained by BLM and which should be disposed of (and to whom); then, if retained what uses should be allowed (tree cutting, recreation, grazing, mining, and off road vehicles), where, and how will other values be protected (historical sites, water, soil, wildlife, scenery, open space, etc.).

2. Public concern over energy development is intense.

   a) The Denver Coal Basin lies just east of this same "Front Range Urban Corridor" and contains approximately 250,000 acres of subsurface estate. Approximately 40% is known to contain recoverable coal using the U.S. Department of Interior criteria. Over 14,000 acres are currently under preference right lease application.

   b) There are approximately 13,000 acres of public land and 250,000 acres of subsurface estate with high to moderate oil and gas potential and nearly all are presently leased.

3. Before making any land or resource decision, the effect on the economy and social well-being of the local area must be considered.

The final plan will guide the management of the BLM administered lands and resources for at least 10 years. It will improve the effectiveness of the Resource Area Manager in day to day decision making, annual funding projections, and public information by establishing long term goals for land and resource management.

THE PLANNING PROCESS

The planning process described in BLM planning regulations 43 CFR part 1600, consists of nine action steps: (1) Inventory and Data Collection; (2) Identification of Issues; (3) Development of Planning Criteria; (4) Management Situation Analysis; (5) Alternative Formulation; (6) Assessment of Alternatives; (7) Selection of Preferred Alternative; (8) Selection of Resource Management Plan; and (9) Monitoring and Evaluation.

The nine action steps are summarized below. Detailed documentation of the first seven completed steps is available for review in the Northeast Resource Area office.

STEP 1. INVENTORY

The public resources are continually inventoried to establish a data base for use in the analysis of later steps. Chapter 3 of this draft environmental impact statement describes the various resources that have been inventoried.

STEP 2. IDENTIFICATION OF ISSUES

The general public, other federal agencies, and state and local governments were asked to identify public land management issues in the resource area. In addition, BLM identified management concerns that were not identified by these groups. This step determined the scope of the plan by determining the significant issues to be addressed. The issues are presented below.

STEP 3. DEVELOPMENT OF PLANNING CRITERIA

Planning criteria were developed to identify the considerations and constraints that would be applied throughout the planning process. For example, the criteria developed which apply to the issue, "Which public land is suitable for livestock grazing?" include (a) distance from water; (b) excessive slope or other physical barriers; (c) forage production; and (d) current and potential erosion. Further explanation is presented below. Specific planning criteria developed for each issue are available for review in the Northeast Resource Area Office and are included in the definition of issue management decision options (Chapter II).

STEP 4. MANAGEMENT SITUATION ANALYSIS

This step explores the identified issues and concerns to determine the capability of the public resources to respond to demand. It describes the resources potential, explains how the resources are currently being managed, and determines possible options for managing the resources in an effort to meet the demand. The Management Situation Analysis was used in developing the Alternatives (Chapter II) and the Affected Environment (Chapter III).

STEP 5. ALTERNATIVE FORMULATION

The current management and management options in step 4 were used to formulate alternatives in this step. Several initial alternatives were considered but only four alternatives to current management were finally selected for detailed study. Alternatives not carried forward are listed at the end of Chapter II (Alternatives Considered but Eliminated from Detailed Study).

STEP 6. ASSESSMENT OF ALTERNATIVES

The physical, biological, and human effects of implementing each alternative were analyzed. This step is the environmental analysis required by the National Environmental Policy Act and is presented in Chapter IV and summarized in Chapter II.

STEP 7. SELECTION OF PREFERRED ALTERNATIVE

The Preferred Alternative presented in Chapter II was formulated based on (1) issues identified through the process; (2) public and other agency input received at public meetings, workshops, and through newsletters; (3) formal coordination and consultation with other agencies; (4) decision criteria developed and considered by management; and (5) analysis of the impacts associated with the specific recommendations in each of the five alternatives. The Preferred Alternative is also analyzed for environmental impacts as described in step 6.

STEP 8. SELECTION OF RESOURCE MANAGEMENT PLAN

The eighth step is the plan selection approval process. It is completed after public comment on the draft document and publication of the final environmental impact statement. The Final Plan is implemented after considering comments on the Final EIS and issuing a Record of Decision.

STEP 9. MONITORING AND EVALUATION

The plan is implemented according to an implementation schedule included in the Final Plan. The implementation schedule is subject to adjustment because of possible funding constraints. When additional detailed information is needed for implementation, more site-specific activity plans and assessments are written. The effects of implementation are monitored and evaluated. Standards are developed to determine whether or not mitigation measures are satisfactory, assumptions used in analysis of impacts were correct, and whether significant changes in related federal, state, or local land use plans have been made. Monitoring and evaluation reports are available for public review.

PLANNING ISSUES AND CRITERIA

Issues

At the beginning of the planning process, BLM, the general public, other federal agencies, and state and local governments identified issues and management concerns in the resource area (see Chapter V, Consultation and Coordintion). The issues were then screened to determine which issues would or would not be considered in the resource management plan.

Issues that would not be resolved in the resource management plan were documented and are on file in the Resource Area Office. These issues were totally administrative in nature or were outside the BLM's jurisdiction.

As an example, "Garbage on public land is degrading the visual resource." The resolution of this issue involves an administrative decision and the necessary budget to send someone out to clean up garbage. It does not involve a land use decision or commitment of natural resources but only a commitment of manpower.

Another example, "What will be done about air pollution from the west slope oil shale development." This issue is referred to other west slope districts for resolution.

Issues that would be resolved in the resource management plan were used to determine the topics to be covered in the alternatives and to key in on the important decisions that needed to be made. These issues are listed below and usually encompass several similar individual issues written in a form suitable for addressing in the plan. Each issue is discussed further in Chapter II.

1. Land Status: What public lands should be disposed of and to whom? Of the federally retained lands, what agency should manage the resources? What effect will these land tenure adjustments have?

2. Access: What lands have or need public or administrative access? What effect will this access have and what effect will other management have on access needs?

3. Wildlife Habitat: Where are the wildlife habitats of importance and how should they be managed? What impacts will occur from managing wildlife and what impacts will other BLM projects have on wildlife.

4. Timber and Firewood: Where is there forest lands suitable for commercial cutting and for non-commercial cutting? What techniques may be used and what will be the annual volume of timber cut? What impacts will result from these cuttings and what effect will other management have on the forest?

5. Livestock Grazing: Where should grazing use continue, and what areas should be open or closed to future use? What impact will grazing have and what effect on grazing will other BLM actions have?

6. Water Quality and Floodplains: Where is there a need to be particularly concerned with floodplains and water quality, and how will the BLM projects be designed to minimize degredation? What effect will BLM projects have on water quality and how will needed restrictions affect other management?

7. Water Sources: Where are there water sources on public lands? What effect will BLM projects have on these sources of water and what effect will the use of these waters have on other BLM actions?

8. Soil Erosion: What areas of active soil erosion need special attention and where is erosion hazard high enough to warrant restrictions? What effect will BLM projects have on soil erosion and what effect will the restrictions have on management.

9. Agricultural Use: What public lands should be open to agricultural use and which closed? What effects will occur?

10. Fire Protection: Where should Fire Protection be specifically provided? What effects could occur?

11. Prescribed Burning: What areas should be closed to prescribed burning? What effect will the burning have and what effect will other management have on burning?

12. Open Space: What lands should be preserved as open space? What effect will this preservation have and what effect will other management have on the preservation?

13. Scenic Quality: Where should scenic quality be preserved and to what degree? What effect will BLM management have on the scenic quality and how will the restrictions affect other management?

14. Recreation Opportunity: What types of opportunities should be provided and where? Where are specific facilities or development needed? What impact would these have and what effect would other management have on the recreational opportunities desired?

15. Cultural Resources: How will unidentified cultural resources be protected, and how will known sites be managed to preserve their value? What destruction will be likely from BLM projects and what affect will this protection have on other management?

16. Paleontologic Values: How will unidentified paleontologic values be protected and how will known sites be managed to preserve their value? What losses will be likely due to BLM projects and what effect will this protection have on other management?

17. Geologic Features and Hazards: Where are geologic features and hazards located and what actions will be taken? What effect will these actions have and how will the features and hazards be affected by other management.

18. Locatable Minerals: What public lands should remain or be closed to mineral location? What effect will the closures have and what impact will other management have on the exploration and development of locatable minerals?

19. Saleable Minerals: What public lands should be closed to material sale? What effect will the closures have and what impact will other management have on the exploration and development of saleable minerals?

20. Coal: What lands should remain available for further consideration for the leasing of coal? What impact would the leasing for coal exploration and development have and what effect will other management have on coal availability?

21. Oil and Gas: Where should oil and gas exploration and development be excluded or limited and how? What impact would the leasing for oil and gas have and what effect will other management have on oil and gas activity?

22. Air Quality: What air quality classifications and standards will apply to BLM projects? What effect will BLM projects have on air quality and how will the classification affect other management?

23. Road and Trail Standards: What road and trail construction and maintenance standards should apply on public lands? What impacts will occur from these standards and what effect will other management have?

24. Pest Control: How will areas in need of pest control be identified and what types of control may be used? What impact will these actions have and what impacts on pest populations will other management have?

25. Use Authorizations: How will responses to applications for the various use authorizations be made? What effect will this procedure have and what effect will other management have on applications?

26. Public Information: How will the public be informed as to public land location and uses? What effects will result?

27. Unauthorized Use: How will unauthorized use be prevented and resolved? What effect will this have and how will this be affected by other management?

28. Economics: What impacts on the local and national economy will BLM management have? How will the highest benefits be attained at the least cost? How can negative impacts be mitigated?

29. Social: What impacts on the well being of local and national groups will BLM management have? How can the negative impacts be mitigated?

The identification of areas potentially suitable for special designation to either wilderness, natural area, or an area of critical environmental concern was included in the planning process. None of the inventories nor public recommendations identified potential areas.

Criteria

Planning criteria were developed for each issue to aid in the formulation of the resource management plan alternatives and in the environmental analysis process. More specifically, planning criteria (1) aided in the compilation and analysis of inventory data; (2) helped determine the level of detail and scope of the analysis of the recommendations; (3) identified specific laws, policies, and regulations limiting the types of recommendations appropriate for the plan; and (4) provided a logical thought process for developing the plan alternatives. Planning critieria are based on:

1. National, regional, and local laws and regulations;
2. Multiple-use and sustained yield principles set forth in the Federal Land Policy and Management Act;
3. BLM national and State Director guidance;
4. Results of public participation and coordination with other federal, state, and local agencies;
5. Analysis of data and information needs;
6. A systematic interdisciplinary approach to achieve integrated considerations of physical, biological, economic, social, and environmental conditions.

The criteria have been incorporated into the management categories and definitions described in Chapter II.

CHAPTER II - ALTERNATIVES INCLUDING THE PREFERRED PLAN

INTRODUCTION

This chapter describes the alternatives considered in this environmental impact statement. It is divided into 4 major sections: (1) Issue Management Options Considered and Analyzed in Detail, (2) Multiple Use Plan Alternatives Considered and Analyzed in Detail, (3) How the Preferred Plan Alternative was Selected, (4) Options and Alternatives Considered but Eliminated from Detailed Study.

ISSUE MANAGEMENT OPTIONS CONSIDERED AND ANALYZED IN DETAIL

All BLM administered lands and resources were designated to management categories (A,B,C, etc) for each of the 29 issues. Certain issues are administrative type decisions and therefore have only category A. Others which are land and resource use allocations may have from 2 categories (A and B) through 5 categories (A through E) to choose from. Each category is described below by identifying management goals, objectives, procedures, and criteria. These descriptors are sometimes called management prescriptions. For public lands all 29 issues are addressed, whereas for subsurface estate only 4 issues (18 through 21) are included since the surface resources are not administered by the BLM. Also note that where more than one category designation was identified as possible and reasonable by the team specialists they (A,B,C, etc.) were included by designation in the alternatives.

1. Land Status

BLM administered lands are placed in one of three categories: A. Retention, B. Disposal, or C. Specific Review based on national interest. National interest is based on qualities inherent in the land or its use that best provides for or satisfies present and future needs of the American people. The two basic qualities evaluated to determine national interest are location and the relative scarcity of goods, services, or money capable of being produced. Land status adjustments may be made by exchange, transfer, or sale.

A. Retention - There are values that appear to be significant (i.e. national interest) on these lands, therefore they are recommended to be retained and managed in federal ownership. Appendix B footnotes identify the federal agency best suited to manage the land if other than the BLM. A description of the rationale for retention and agency determination is also included. If recommended for a specific agency and that transfer is determined to be unattainable then another federal, state, or local agency may be considered. Where the BLM will be the retaining and managing agency, adjacent lands within the area of national interest that would contribute substantially to the public values may be acquired.

B. Disposal - It is in the national interest that these lands be disposed of to a non-federal entity. Appendix B footnotes identify public or private disposal values and specific disposal designations. The rationale for disposal and public or private determinations are made as follows:

1. State - public values (agency identified).
2. Local - public values (county or city identified).
3. Private - non public values (specific group or individual identified).

or 4. General - either public or non-public (open disposal).

If the recommended disposal is determined to be unattainable then another determination for disposal may be considered within public entities or to general sale if originally private.

C. Specific Review - These are lands that cannot be designated for Retention nor Disposal without further study and analysis. Review could be initiated by public request, other agency interest, or by BLM. There are several reasons for this designation. One reason for this designation is footnoted in Appendix B as "Mining Claim Policy". This policy does not permit disposal of lands where unpatented mining claims exist. Land so claimed, if otherwise suitable for disposal, may be made available if a mineral examination proves the claim(s) invalid or an exception is determined to be appropriate and acceptable to the mining claimant(s). Of course, such lands may be patented to the claiment if the requirements of the 1872 mining law are fulfilled. Other reasons include complex ownership patterns, rights of way provisions, high interest values, and intense public concern over future uses which indicates the need for detailed analysis and specific review. The criteria for such review will be the same as above with continued public involvement and consideration of unique local conditions.

All subsurface estate falls in this category because a mineral appraisal is required prior to determination.

2. Access

A. Existing - Legal public access is provided by a federal or state highway, county road, forest service road, or BLM road or easement. Private roads do not provide legal public access, consequently they are not indicated as existing access in this plan.

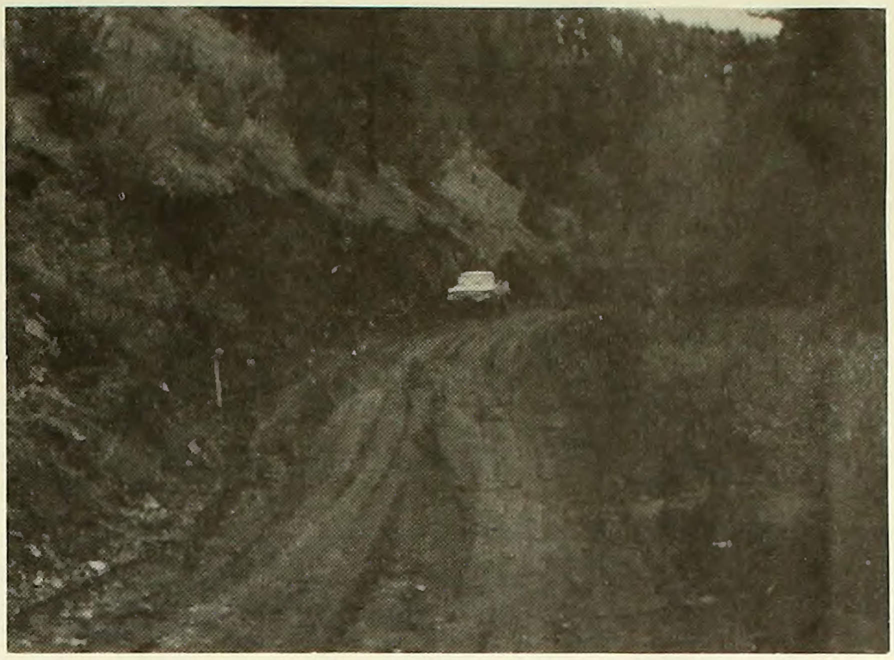
B. Needed - Legal access (public or BLM) is desired for this public land. this may or may not require new construction but permanent access will be acquired by:

1. Negotiation with all affected landowners
2. Exchange of land as required
3. The use of the right of eminent domain to condemn for access

Two types of easements are possible:

1. Exclusive - BLM controls use and furnishes maintenance. Public access would be regulated by the BLM.
2. Non Exclusive - BLM does not control the use of the road and may provide partial maintenance. Public use may or may not be permitted.

C. None - Legal access is neither available nor needed. The BLM will not pursue legal access.



3. Wildlife Habitat

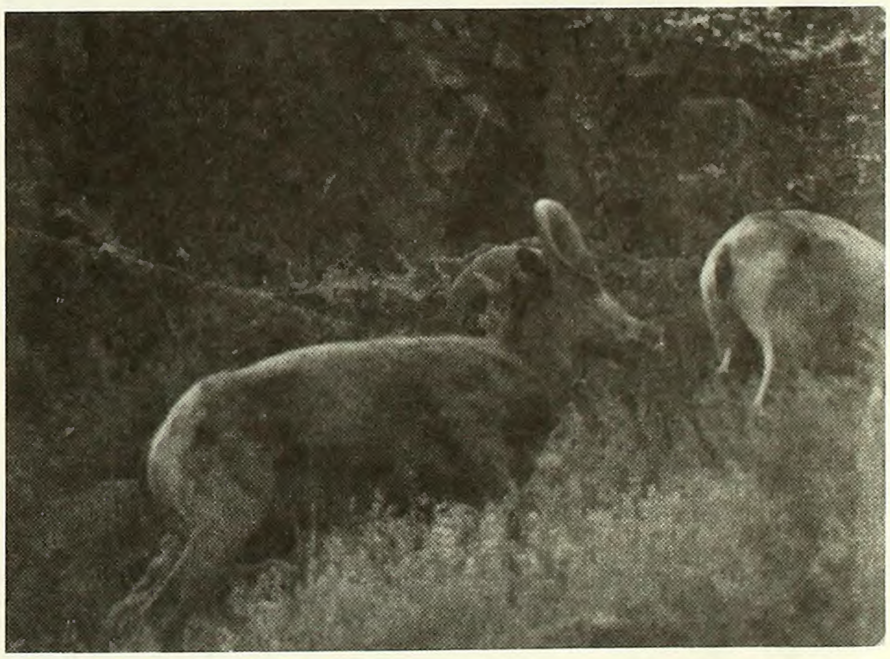
A. Important - The goal for these lands is to maintain or improve the habitat to meet the objectives of the strategic plan of the Colorado Division of Wildlife. Management may be provided through cooperative agreement with an appropriate state or federal wildlife agency or through the development of a BLM Habitat Management Activity Plan. The criteria used to determine important habitat are:

1. Threatened or Endangered (T&E) species habitat
2. Crucial or important seasonal habitat for game species or Federal/State high interest species.
3. Important riparian habitat

Likely target species include State or Federal T&E species such as: bald eagles, greenback cutthroat trout, white pelicans and greater prairie chickens, or high interest species such as bighorn sheep, brown trout, elk and other game species, or great blue herons, ferruginous hawks, gizzard shad and other nongame species.

Projects proposed could include water developments (guzzlers, catchments, and spring developments), vegetative manipulation (clearcuts, chaining, burning, seeding and planting), road control (closures and seasonal restrictions), stream improvements (gabions, log dams, trash collectors, fencing, rock placement), and breeding habitat improvement (island stabilization or isolation, nesting structures, and artificial reefs), etc. Specific project design will be developed during the environmental analysis process and will include appropriate BLM specifications.

B. General - These are areas which have no important wildlife values currently identified. These areas will be inventoried to determine if any important values are present before any major action could occur. General wildlife habitat will be protected by incorporating wildlife concerns in the environmental assessment of proposed actions including the development of stipulations and mitigating measures.



4. Timber and Firewood

A. Available - Intensively managed commercial forest lands which are "available" for timber harvesting. These include forest inventory classes: Non-Problem and Restricted.

The forest management objective for these productive sites is to provide a sustainable timber harvest through the limits of a yearly allowable cut. Harvesting will be accomplished through controlled timber sales to commercial loggers and to family firewood cutters. Cutting practices will be limited to those which will provide for natural regeneration of the timber stand, and protection of the productivity of the site.

B. Unavailable - Less intensively managed commercial forest lands which are currently "unavailable" for general timber harvesting. These include forest inventory classes: Withdrawn-Fragile Gradient and Adverse Location.

The forest management objective is to protect these productive lands from pests and disease until technology becomes locally available to include them for harvest in the yearly allowable cut. Unavailable lands are currently withdrawn from harvesting due to reforestation problems associated with aspect, shallow, droughty soils, and steep, easily eroded soils. Adverse location results from small size, steep slopes and fragile soils. Forest management will include direct pest control, mortality salvage, and controlled harvest by firewood cutters.

C. Non-commercial - Less intensively managed "non-commercial" forest lands which are unavailable for general timber harvesting. These include the forest inventory class: Withdrawn-Low Site.

The forest management objective is to protect these unproductive, fragile lands from loss of forest cover. Forest management will be limited to direct pest control, mortality salvage, and limited and controlled harvest by firewood cutters.

D. Non-forest - Lands less than 10% stocked with commercial tree species. Generally, any management of trees will be for the purpose of improving or maintaining other resource values.

5. Livestock Grazing

All grazing in the Northeast Resource Area falls under Section 15 of the Taylor Grazing Act. Leases will only be issued when the applicant meets qualifications described in 43 CFR 4110 including being a US citizen; being a commercial livestock operator and having base property to support the livestock.

Land in the NE Resource Area falls under 3 categories for grazing:

A. Leased - These lands are currently leased for livestock grazing. Custodial level management provides for use up to the grazing capacity as determined by field examination with adjustments made if necessary after monitoring. The grazing on BLM occurs in conjunction with the leasees normal operation. Improvements are generally operator initiated, developed and maintained. Examples of improvements include but are not limited to: fences and water developments such as stock water impoundments and spring developments. Monitoring of grazing use, range condition, and trend will provide indications of needed improvements or possible changes in grazing use.

B. Open - After application by a qualified livestock operator, suitability for leasing for grazing is determined through the environmental assessment process.

Criteria used in this determination which could preclude grazing are:

1. Slopes greater than 50%.
2. Further than 4 miles to water on the plains; 1 mile in the Front Range.
3. Erosion soil surface factor greater than 60.
4. Forage production requiring more than 32 acres per Animal Unit Month.
5. Land ownership or control for a logical lease unit.
6. Conflicts with other resources.

Application of these criteria may result in a decision that the land is unsuitable for grazing, rejection of the application and reclassification to category C or suitable for grazing, lease granting, and reclassification to category A.

C. Closed - These lands are not available for grazing. They are either unsuitable using the criteria listed under B above, have no potential, or have more value for other uses which are not compatible with grazing. Grazing applications for these lands will not be accepted.

6. Water Quality and Floodplains

A. Concern Area - These areas are in need of management actions to correct pollution or maintain quality. These areas include watersheds which: 1) do not meet State of Colorado water quality standards, 2) are municipal watersheds 3) contain significant 100 year floodplain hazards, or 4) which other government entities identify as critical for cooperative planning. Practices may include removal or modification of pollution sources, monitoring for potential sources, and limitations on uses or actions which may result in pollution. Modifications and developments within the 100 year floodplain must not interfere with the natural beneficial functions of the floodplain or create hazards to life or property without proper mitigation. All projects will be designed to include general preventative practices discussed under B below.

B. General - Impacts on water quality will be minimized by project design. Preventative practices such as runoff control devices, proper logging practices, proper road location and design, maintenance of vegetative cover, confinement of pollutants, and treatment of pollutants will be included to minimize potential pollution. Projects will be inspected to assure that compliance with floodplain restrictions described in A are included when needed.

7. Water Sources

All water rights and water sources will be managed according to Colorado Water Law. Minimum stream flows adjudicated to the Colorado Water Conservation Board are generally sufficient for BLM needs. Non BLM vested water rights will be recognized, respected, and protected.

A. Known - A water source on BLM managed land has been identified. Water rights to sources needed for BLM management purposes will be acquired according to Colorado Water Law. Water right acquired by BLM and/or its licensees will not cause harm to other vested water rights.

B. None - There are no known water sources on Public Lands. New discoveries of water sources on Public Lands will change management to A.

8. Soil Erosion

A. Problem Area - These lands are in need of special corrective management actions to arrest unacceptable soil loss, restore soil stability, and return soil productivity. Practices such as vegetation establishment, soil additives, road construction limitations and standards, mining controls, off-road vehicle restrictions, etc. may be necessary. Annual monitoring of the erosion condition will identify the need for more intense actions.

B. Stable/Slight - Erosion hazard is slight. The soils are free or relatively free of limitations that affect intended uses or proposed projects, or the limitations are easily overcome. After any project annual monitoring checks for erosion will identify the need for any actions.

C. Moderate - Erosion hazard is moderate. The soils have limitations imposed by topography, water table, soil texture, soil depth, plant nutrient deficiencies, stones, etc. These limitations can usually be overcome through project design during environmental assessment and the incorporation of best management practices. After any project, annual monitoring checks for erosion will identify the need for any actions.

D. Critical/Severe - Erosion hazard is severe. The soils have extreme limitations imposed by steep topography, high water table, stream flooding, unfavorable soil texture and pH, shallow depths, lack of nutrients, numerous stones, etc. Sophisticated care is needed in project design during environmental assessment and precise use of best management practices is required to minimize soil loss. Usually high costs are associated with management actions. After project completion a monitoring check immediately following the next period of risk (period of heavy runoff) and annually thereafter will identify the need for further action.

9. Agricultural Use

A. Open - No public lands were found in the "Important Farmlands of Colorado State Summary and Map". Locally suitable agricultural crop production lands will be identified by comparing agricultural value to the other resources present. If, after application, the area is found suitable, use will be authorized by lease or sale.

B. Closed - These lands are not available for agricultural use. They are either not suitable, lack potential, or are more valuable for other uses. Applications will not be accepted.

10. Wildfire

A. Cooperative - The prevention and suppression of wildfire is accomplished by either a memorandum of understanding or a cooperative agreement. Included will be:

1. Parties involved
2. Purpose
3. Authorities
4. Agreement items and responsibilities
5. A provision for annual review
6. A savings clause to cover funding changes or cancellation
7. Reimbursement clauses defined

B. General - Wildfire protection is historically not needed. If a fire occurs reimbursement may be provided to the appropriate suppression agency(s).

11. Prescribed Burning

A. Open - On these lands proposals for prescribed burning will be reviewed through the environmental assessment process to determine acceptability and to design the burning project. Criteria used in this review include:

1. An earlier successional stage of vegetation is beneficial
2. Reduction of fuel hazards
3. Manipulation of specie composition is needed
4. Reduction of noxious weeds can be achieved
5. No private property is threatened
6. Fire danger is less than or equal to Class III
7. Smoke dispersal must be acceptable and permit obtained
8. Other resource values fully considered

B. Closed - Prescribed burning is not suitable for use on these lands.

12. Open Space

A. Important - Public lands that are managed so as to provide the value of open space in the form of aesthetics and natural beauty. This is done in areas surrounded or encroached by residential structures and/or urban growth. Management is such to retain the natural appearance and provide a park-like area in an otherwise developed area.

B. General - No special open space protection needed. Projects will be acceptable that consider the surrounding land uses, State and Local plans, and public preferences.

13. Scenic Qualities

Scenic quality is protected by identifying visual resource management classes for all public lands, and incorporating the classes into project design during environmental analysis.

A. Class I - Any management activity within this landscape should not attract attention. This class provides primarily for natural ecological change. This is mostly applied to wilderness areas, wild and scenic rivers, and similar situations.

B. Class II - Any management activity performed should not be evident in the characteristic landscape. While the activity may be seen it should not attract attention.

C. Class III - Management activity may be seen (evident) and begin to attract attention but should remain subordinate to the surrounding landscape. The surrounding landscape should still be that which draws the eye, not the management activity.

D. Class IV - Any management activity performed may be the dominant feature in the landscape in terms of scale (size) but should repeat the basic characteristics (form, line, color, texture) of the landscape i.e. in a city of linear straight edged buildings a rounded structure would not be appropriate.

E. Class V - This class applies to areas where the natural character has been disturbed to a point where rehabilitation is needed to bring back the original or natural landscape.

14. Recreation Opportunities

The general management of recreation opportunities within the Resource Area will be of the extensive (dispersed) type. Intensive or special recreation management areas will be identified and managed according to a permit or site specific plan.

Recreation opportunities are classified according to (1) the types of experiences that can be achieved from participation (2) in a variety of activities (3) within different environmental settings. The primary determinant of these recreation opportunity classes is the setting. It describes the overall environment in which the recreation occurs, influences specific types of activities that can occur, and ultimately determines the resulting types of experiences that users can achieve. The setting is formulated using a number of factors such as remoteness, size, amount of landscape alteration or development, the number of recreation users and their noticeability, management constraints, etc.

Six broad types or classes of recreation opportunities have been recognized on a continuum or spectrum ranging from largely natural and low use areas to highly developed and intensively used areas.

P (Primitive) - Areas lying more than three miles from the nearest point of motor vehicle access, having unmodified landscapes, where there is little evidence of other people, and that are almost completely free of management controls. There are are no such areas in this Resource Area.

A. SPNM (Semi-primitive non-motorized) - Management techniques maintain the area as characterized by a predominantly unmodified natural environment of a size or location that provides a good to moderate opportunity for isolation from sights and sounds of man. The area is large enough to permit overnight foot travel within the area and presents opportunity for interaction with the natural environment with moderate challenge, risk, and use of a high degree of outdoor skills.

B. SPM (Semi-primitive motorized) - Management techniques include low-key on-site controls and regulations that effectively prevent resource damage by vehicle use. Some minimal facilities for user safety and protection of resource values are provided. Low to moderate intergroup contacts occur. Motorized use is permitted and provided for by maintenance of primitive road or motorized trail systems. Some road/trail construction occurs to enhance recreation travel opportunity. Roads may be closed seasonally for the benefit of other resources.

This class provides/maintains areas characterized by predominantly unmodified natural environment in a location that provides good to moderate isolation from sights and sounds of man except for facilities/travel routes sufficient to support motorized recreational travel opportunities which present at least moderate challenge, risk and a high degree of skill testing.

C. Roaded Natural (RN) - Management techniques provide on-site controls and regimentation that provide security. Rustic facilities are provided for user convenience, safety and resource protection. Management actions may include enhancement, site hardening and other activities. Developed sites provide for moderate density. Other resource activities harmonize with the overall sense of natural surroundings.

These areas are characterized by a predominantly natural environment with evidence of moderate permanent alteration of resources and resource utilization. Evidence of the sights and sounds of man is moderate, but in harmony with the natural environment. Opportunities exist for both social interaction and moderate isolation for sights and sounds of man.

D. Rural (R) - Management techniques include extensive facilities, both public and private, designed for high density use. Facilities are keyed to specific activities, and to intensive motorized use and parking. High density use provides opportunity for social interaction, not for isolation. Controls and regimentation are obvious.

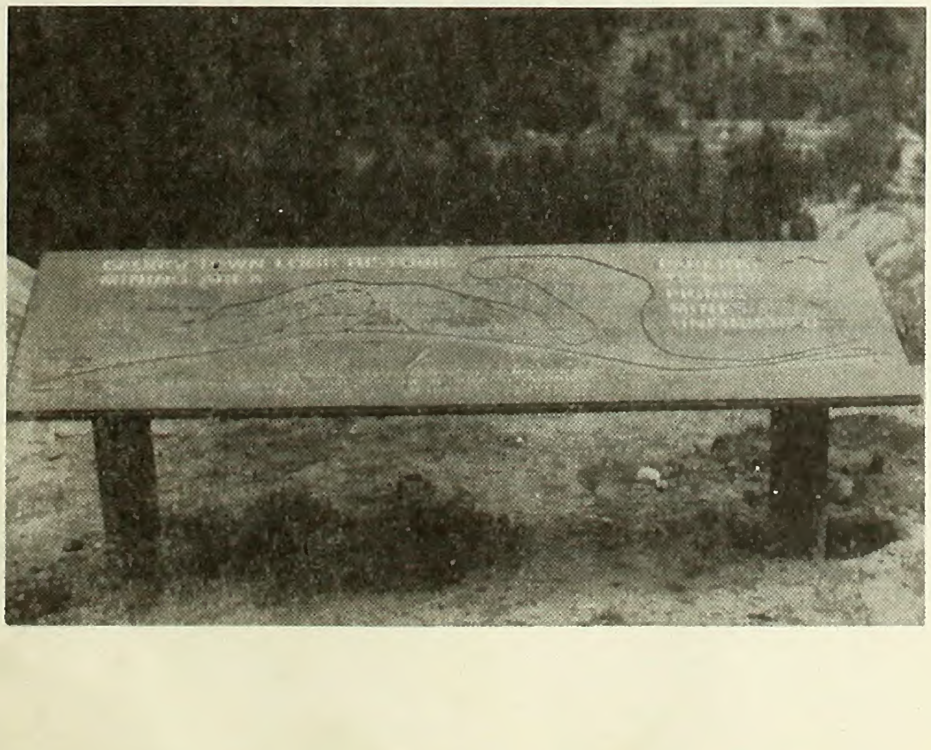
This class provides/maintains areas characterized by substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

E. Urban (U) - These areas are characterized by unnatural, highly modified, and highly modernized surroundings. Design is for intensive use and user comfort and convenience.

Urban opportunities may occur as part of the support facilities for other intensive recreation development on BLM lands. However, development should be made by the private sector.

These class names merely suggest the kinds of recreation opportunities common to each type of area, but they are not completely descriptive by themselves. For example, the title "Semi-Primitive Motorized" does not mean that areas so classified are necessarily utilized by off-road vehicles, though they may be. Instead, this classification simply describes areas that contain primitive motor vehicle access routes and where numbers of public users are low and dispersed.

The entire Resource Area is open to off road vehicle (ORV) use except for 132 acres just south of Ward (Unit # 602 southern portion). But other areas may be limited to ORV use on a site by ste basis when limitations are identified and the need arises.



15. Cultural Resources

A. NRHP - Those areas and sites included in or that are determined eligible for inclusion in the National Register of Historic Places or as a National Historic Landmark are managed according to regulations in 36 CFR 800 and in the Historic Sites Act (Public Law 292, 74th Congress). Satisfaction of these Regulations may include:

1. Preservation/Avoidance
2. Restoration/Stabilization
3. Limited Excavation/Recordation
4. Interpretation
5. Protection/Maintenance

B. State/Local - Those areas that are recognized by the Colorado Historical Society or by local historical societies as being of state and local significance but do not necessarily qualify for the National Register. While these areas and sites should ideally retain their integrity and intrinsic values, actions are a management decision perogative which should be done in consultation with state and local interests as appropriate. Possible actions include:

1. Formal determination of eligibility for NRHP
2. Preservation/Avoidance
3. Restoration/Stabilization
4. Excavation/Recordation
5. Interpretation
6. Protection/Maintenance
7. Removal/Destruction

C. Limited - Areas of limited local significance and concern to local residents and organizations. Management decisions may include those actions listed in B above and would be done in consultation with the appropriate interests.

D. High - Those areas that have high potential for the discovery of cultural values based on Class I inventories and other sources of information. These areas would usually be approached with a Class III inventory (100%) before being disturbed (BLM Manual 8111).

E. Low - Those areas that have exhibited a medium or low potential for cultural values through Class I or limited inventories and which would be approached through Class II inventories as defined in BLM Manual 8111.

F. None - Those areas which, based upon adequate survey, have proved to exhibit no cultural values of consequence and are of no further apparent interest for the management of cultural resources. The appropriate action would be occassional monitoring for subsurface data.

16. Paleotologic Resources

These classifications are subject to change if more detailed site specific information is obtained.

A. Class Ia: Immediate detailed study follow up is needed. Fossils of scientific interest are exposed on the surface, or are very likely to be discovered with detailed field work in the area. This classification is used for site specific localities having scientifically significant fossils. As such sites are discovered, the following management practices will be implemented:

1. Preservation by avoidance or stabilization
2. Collecting and interpretation through excavation by qualified paleontologists

B. Class Ib: Other areas having a high potential for scientifically significant fossils. In these areas, a paleontological evaluation will be done by the geologist, on a case-by-case basis, prior to any surface-disturbing activity. These evaluations will change this classification to Class I-a, Class II, or Class III, as appropriate.

C. Class II: There is evidence of fossils, but the presence of fossils of scientific value has not been established, and is not anticipated. Detailed study may be desirable in the future for the evaluation of all types of fossil collecting. This classification may identify recreational values in fossils.

D. Class III: Little likelihood of finding fossils of use. No further considerations of fossils necessary unless future discoveries require a change of classification.

17. Geologic Features and Hazards

A. Concern Area - Presence of significant geologic features or hazards is known or suspected. Management actions will be based on field investigations to develop surface protection requirements for preserving the scientific and scenic values of significant geologic features. Field investigations and possible detailed engineering studies will be made in order to avoid or mitigate problems due to geologic hazards. When management actions are considered for such an area they will include protective stipulations.

B. None - Occurrance of significant geologic features or hazards in the area is unknown. Field investigations during the environmental analysis process and/or new information about features or hazards could change the classification to A above.

18. Locatable Minerals ("hardrock" minerals such as gold, silver, lead, zinc, copper, uranium)

A. Available - Mining claims may be located on these lands and, if a discovery of valuable mineral is made, and other requirements found in 43 CFR 3860 are met, the claims may be patented. Until patent is issued, mineral operations are regulated through surface management regulations found in 43 CFR 3809. The purpose of these regulations is to establish procedures to prevent unnecessary or undue degradation of federal lands which may result from operations authorized by the mining laws. Reasonable reclamation of lands disturbed by such mining operations is also required. Three catagories of compliance are defined by the regulations depending on the level of mining activity contemplated by the mining claimant. 1) Negligible surface disturbance, i.e., operations not involving the use of mechanized earth moving equipment or explosives, is defined as "casual use". No notification or approval is required for such operations, however, they may be monitored to ensure that unnecessary and undue degradation of federal lands does not occur and that disturbed areas are reclaimed. 2) Mining operations that involve surface disturbance (greater than "casual use") of less than 5 acres per year require the filing of a Notice of Intent at least 15 days in advance of operations. Approval of this notice is not required; however, consultation and field examination may be required to ensure the prevention of unnecessary and undue degradation of federal lands. When reclamation of the disturbed area has been completed, notification is required so that an inspection of the area can be made. For details on the content of a Notice and operating standards, see regulations 43 CFR 3809-1-3 (c), (d) and (A). 3) If a mining operation is to disturb more than 5 acres per year, or is in certain special category lands (ie. off road vehicle closures, withdrawn lands, areas of critical environmental concern), a Plan of Operations is required. The same operating standards as required under 2) Notice of Intent apply, but the plan is subject to approval. Bonding of the operator may be required to ensure the prevention of unnecessary and undue degradation of federal lands and the completion of reclamation. An environmental analysis of the proposed operations is required prior to approval of the Plan of Operations. Failure of an operator to comply with these regulations and avoid unnecessary and undue degradation of federal lands will subject the operator to a Notice of Noncompliance, and, if necessary, court action. It should be noted that 43 CFR 3809 regulations do not apply to subsurface estate.

All mining operations are also subject to other applicable federal, state, and local requirements.

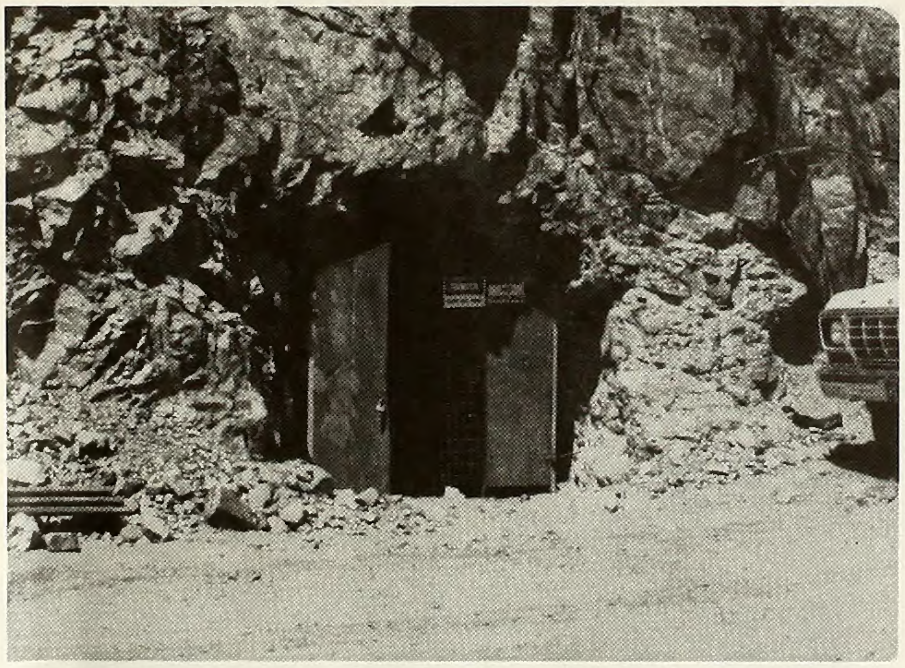
B. Concern Area - Open to location of mining claims as in A, but other important resource values have been identified. Emphasis will be placed on preserving these values or mitigating damage to these resources through the 43 CFR 3809 surface management regulations described under A.

C. Closed - Lands that are or should be closed or restricted from the location of mining claims. Three such catagories are identified:

1. In appendix B under alternative A "C closed" indicates lands presently withdrawn under various Executive Branch authorities such as Pickett Act, Powersite and Reclamation Withdrawals, and various other classifications and withdrawals. The specific order classifying or withdrawing the lands must be consulted to determine what effect, if any, it has on the availability of the land for mining locations. Some lands are completely withdrawn from the mining laws, some are withdrawn with respect to certain minerals, and others place certain requirements and restrictions upon claim locations. Regulations 43 CFR 3809 apply to any legally located claims on these lands. These withdrawals may be changed, lifted, or continued as a result of the Bureau's ongoing withdrawal review program.

2. In appendix B under alternatives other than A, "closed" indicates lands that should be withdrawn from the location of mining claims for the protection of other resource values, which could be irreparably harmed by the development of locatable minerals.

3. In Appendix C, "closed" may indicate acquired surface estate where normally locatable minerals must be leased according to regulations found at 43 CFR 3500.



19. Salable Minerals (sand, gravel, stone, etc.)

A. Open - Mineral materials may be sold upon application and after approval of an operating plan and an environmental assessment. Environmental protection stipulations and reclamation requirements are made a part of the approved plan and permit as site-specific conditions warrant. Procedures are guided by regulations found at 43 CFR 3600 and BLM Manual 3600. Disposals are not made where it is determined that the aggregate damages to public lands and resources will exceed the benefits derived from such disposal, or the land is encumbered by an unpatented mining claim.

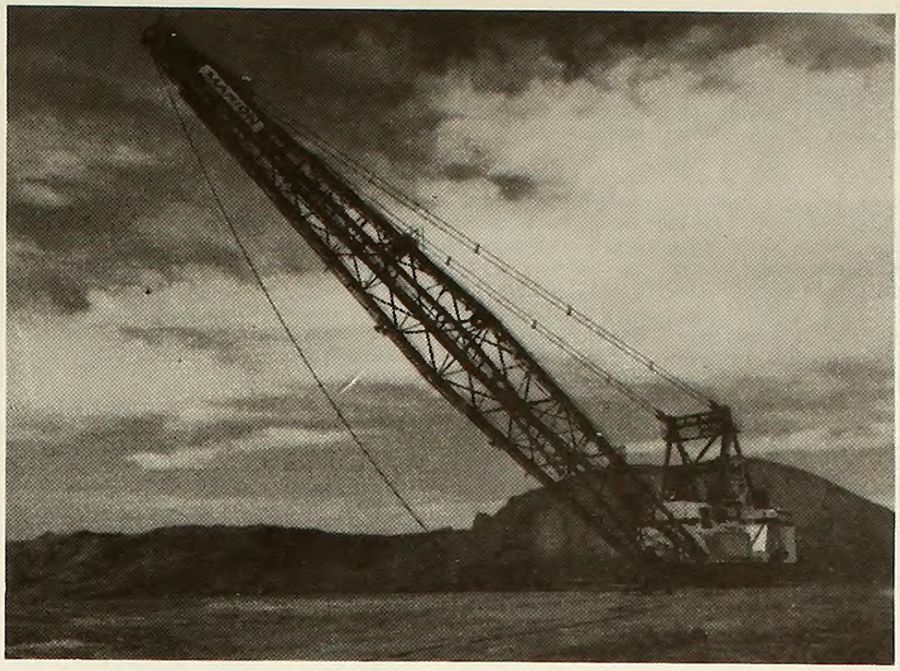
B. Concern Area - Open as in A, but other important resource values have been identified. Site-specific stipulations will be required to protect these resource values. If impacts to these values caused by mineral material extraction cannot be satisfactorily mitigated, the application will be rejected.

C. Closed - These areas have other identified resource values that would suffer unacceptable and irreparable damage should mineral material extraction take place. Applications for these areas will not be accepted.

20. Coal Resources

A. Suitable - These areas are within Known Recoverable Coal Resource Areas (KRCRA) or other areas which as the result of an application were assessed as suitable for coal leasing under the criteria found in 43 CFR 3461 and summarized below:

> Lands are suitable if 1) None of the 20 unsuitability criteria apply, or 2) There are exceptions to all applicable unsuitability criteria.



The following unsuitability criteria (exceptions and exemptions not listed) protect:

1. All federal lands included in the following land systems or categories: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, land acquired with money derived from the Land and Water Conservation Fund, National Forests, and federal lands in incorporated cities, towns and villages.

2. Federal lands within rights-of-way or easements or included in surface leases for residential, commercial, industrial, or other public purposes, or federally-owned surface used for prime agricultural crop production.

3. Land within 100 feet of the outside line of the right-of-way of a public road or within 100 feet of a cemetery, or within 300 feet of any public building, school, church, community, or institutional building.

4. Federal lands designated as wilderness study areas and under review by the Administration and the Congress for possible wilderness designation.

5. Scenic federal lands designated by visual resource management analysis as Class I (areas of outstanding scenic quality or high visual sensitivity).

6. Federal lands under permit by the surface management agency that are being used for scientific studies involving food and fiber production, natural resources, or technology demonstrations and experiments (except where mining could be conducted in such ways as to enhance, not jeopardize, the purposes of the study).

7. All districts, sites, buildings, structures, and objects of historic, architectural, archaeological, or cultural significance on federal lands are included in, or eligible for inclusion in the National Register of Historic Places, and an appropriate buffer zone around the outside boundary of the designated property.

8. Federal Lands designated as natural areas or as National Natural Landmarks.

9. Federally-designated critical habitat for threatened or endangered plant or animal species and habitat for federal threatened or endangered species which is determined by the U.S. Fish and Wildlife Service and the surface management agency to be of essential value and where the presence of threatened or endangered species has been scientifically documented.

10. Federal land containing habitat determined to be critical or essential for plant or animal species listed by a state pursuant to state law as endangered or threatened.

11. An active bald or golden eagle nest site on federal lands and an appropriate buffer zone around the nest site.

12. Bald and golden eagle roost and concentration areas on federal lands used during migration and wintering.

13. Federal lands containing an active falcon (excluding kestrel) cliff nesting site and a buffer zone of federal land around the nesting site.

14. Federal lands that are high priority habitat for a migratory bird of high federal interest on a regional or national basis as determined jointly by the surface management agency and the U.S. Fish and Wildlife Service.

15. Federal lands which the surface management agency and the state jointly agree are fish and wildlife habitat for resident species of high interest to the state and which are essential for maintaining these priority wildlife species.

16. Federal lands in riverine, coastal, and special floodplains (100-year recurrent interval).

17. Federal lands which have been committed by the surface management agency to use as municipal watersheds.

18. Federal lands with national resource waters as identified by states in their water quality management plans.

19. Federal lands identified by the surface management agency, in consultation with the state in which they are located, as alluvial valley floors where mining would interrupt, discontinue, or preclude farming.

20. Federal lands in a state to which is applicable a criterion (1) proposed by the state and (2) adopted by rulemaking by the Secretary.

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) mandates that the Secretary of the Interior review all federal lands for unsuitability and that citizens be allowed to petition for and against designation of lands as unsuitable. Consequently, under SMCRA, the Department has procedures to apply unsuitability criteria both as part of a comprehensive federal lands review and as part of a petition process.

B. Open - Coal lands that are open to application for coal leasing, but have not been assessed in the manner of A. Applied for lands will be assessed under the 20 Unsuitability Criteria described above and those areas found unsuitable will not be leased. These areas are not within Know Recoverable Coal Resource Areas (KRCRA) or other area already assessed but the area may have some coal potential.

C. Unsuitable - These areas were found to be unsuitable for coal leasing under the 20 criteria listed in A above. Applications may be filed but will be rejected unless exceptions to the criteria apply.

In column C of Appendix C certain symbols are used to indicate which of the unsuitability criteria apply. A "+" (plus) indicates building property (Criteria 3) that is conditionally unsuitable because the applicable exceptions are applied only when actual coal leasing is imminent. A "0" (zero) indicates conditionally unsuitable 100 year floodplains and/or alluvial valley floors (Criteria 16 and 19). An "*" (asterisk) indicates wildlife habitat that is conditionally unsuitable (Criteria 9 through 15). Further study and application of exceptions may render these areas suitable.

D. None - These lands do not contain coal beds of the Denver and/or Laramie Formations and are therefore closed to application.

21. Oil and Gas Resources

Categorization of lands for oil and gas leasing and development for alternative A was accomplished through the Northeast Resource Area Oil and Gas Umbrella Enviromental Assessment, CO-050-82-NE-10, C-24793, completed April 1982. Consult this document for more detail on oil and gas.

A. Standard - These areas may be leased and developed for oil and gas with the "standard stipulations" included in leases by form CSO-3100-7 and other standard site specific stipulations included in any use authorization. The standard stipulations are for the protection of surface resources by controlling surface disturbance and reclamation. Specific conditions generally relate to the location of drilling, vehicle use, and improvements. Protection of drainages, waterbodies, springs, wildlife habitat, steep slopes and fragile soils is required. Activities that may adversely affect these values will be suspended if and when necessary. Cultural resources must be evaluated and adverse impacts mitigated.

Standard lease stipulations provide for environmental protection by requiring approval by the BLM of a plan of operations and reclamation before any surface disturbance takes place. Assurance that threatened or endangered wildlife species and cultural resources will not be adversely affected by the proposed operations is required. An onsite inspection is required prior to plan approval and additional site specific stipulations for environmental protection may be developed and made a part of the plan of operations. Where the surface estate is in private ownership, an agreement between the operator and the surface owner regarding reclamation is required.

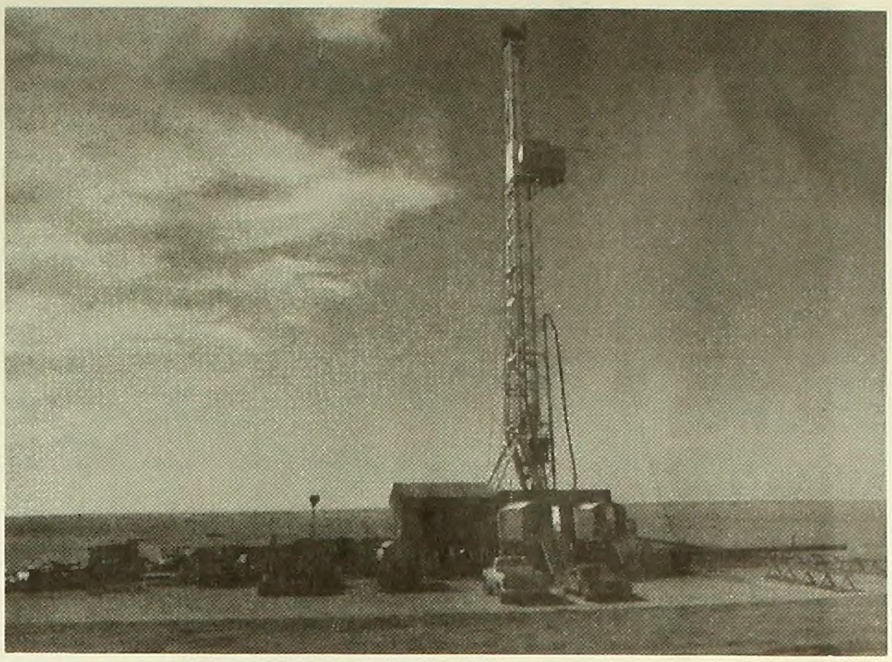
B. Seasonal (seasonal no surface occupancy) - All of the requirements listed in A above also apply to this category of land. However, in addition, these lands have certain values identified which require drilling activities to take place during a certain portion of the year only. These values include primarily watershed stability and important wildlife habitat. Seasonal stipulations do not apply to maintenance nor operation of producing wells. An annual exception may be specifically authorized in writing by the BLM District Manager.

In Appendix C, column B the following numbers are used to identify the permitted time period for drilling operations and the rationale for the restriction.

Number	Development Permitted Time Period	Rationale
1	4/1 - 12/15	Mule Deer
2	7/1 - 12/15	Bighorn Sheep & Mule Deer
3	7/1 - 12/15	Bighorn Sheep & Elk
4	8/1 - 3/31	Wild Turkey
5	4/15 - 11/15	Bald Eagle
6	10/1 - 3/15	White Pelican
7	7/1 - 3/31	Waterfowl
8	6/15 - 2/28	Greater Prairie Chicken
9	7/1 - 2/15	Raptors
10	10/15 - 5/15	Recreation Protection
11	7/1 - 4/30	Elk Calving

C. Yearlong (no surface occupancy) - These lands have resource values of great enough importance that it is reasonable to disallow any oil and gas activity on the surface. Such a lease may be issued for "drainage". That is, a well adjacent to these lands may drain oil and/or gas from under the leased area. In unusual circumstances, a well may be "slant-drilled' from a location adjacent to the restricted area so that the hole bottoms out at some point directly under the leased lands. Exceptions to this limitation may be specifically approved by the appropriate District Manager.

D. Open - These lands are designated for "case-by-case" review. When a lease application is received for these lands, they are considered for an offer to lease, or an application for lease development is received a specific suitability determination is made. Then the lands will be placed in one of the categories A, B, or C above, or E below. This procedure is necessary because of insufficient resource information (possibly requiring a field examination) or the necessity to coordinate with or obtain the consent of other Federal, State, or local agencies.



E. Unsuitable - These lands can not be leased or developed since there are no occupiable sites within 1/2 mile of the subject tract (e.g., the middle of a large reservoir). Areas where subsidence due to the withdrawal of oil and gas may be a hazard to surface structures (such as large dams) are also designated for no leasing. Regulations found at 43 CFR 3101.1-1(b)(3) prohibits leasing within incorporated cities, towns and villages. Areas that have been withdrawn from the mineral leasing laws by executive or congressional actions are also unsuitable. An application for lease on any of these lands will be rejected. If previously leased, development of the existing lease will occur with close supervision to avoid identified problems.

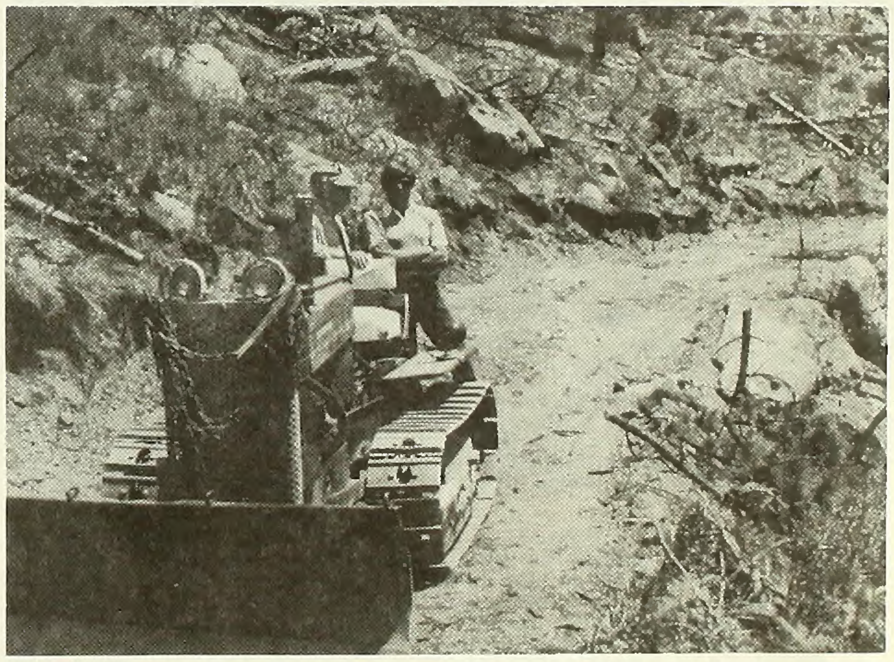
22. Air Quality

A. General - In all "attainment" or "unclassified" areas, Federal Prevention of Significant deterioration Class II or Colorado State Category II standards apply. Proposed projects are evaluated for air pollution impacts through the environmental assessment process including consultation with the Colorado Air Pollution Control Division as appropriate. The projects will be designed to minimize air pollutants and will be monitored by the Colorado Air Pollution Control Division to assure the standards are not exceeded.

The Ambient Air Quality Standards set the maximum level above which air pollutant concentrations are not to exceed. Areas which consistently exceed the standard are classified "nonattainment" and must implement a program by which pollutants will be reduced to a point below the maximum standard.

23. Road and Trail Standards

A. General - A detailed explanation of road and trail minimum standards is found in the BLM Manual. Briefly, all BLM roads and trails will be engineered for durability, safety, and use as expected and not overbuilt. They will be designed to provide adequate drainage and minimize soil erosion. Surfacing will be done as conditions warrant to meet the above engineering and design objectives. Counties will be consulted on road construction and maintenance and their standards will be met or exceeded for permanent transportation system roads.

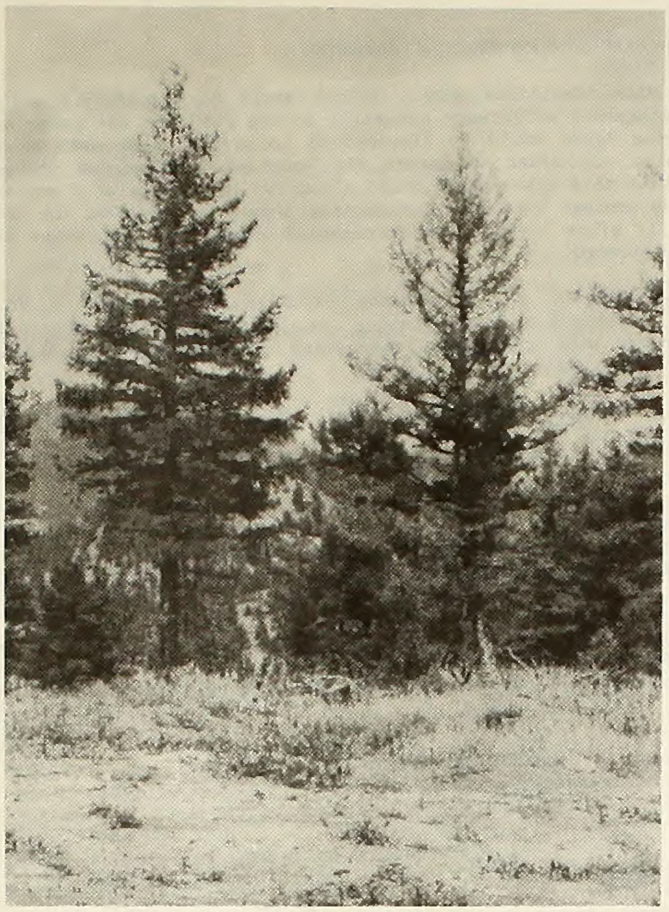


24. Pest Control

A. General - Areas requiring pest control will be identified by: 1) site specific insect and disease surveys as outlined by Entomology reports from the Rocky Mountain Experimental Station, USFS Integrated Pest Management, and BLM; 2) number of acres, location and species for each infestation; 3) priorities will be for commercial timber lands first; lands with high aesthetic value such as near private property, parks, scenic roadways, etc. second; and third when surrounding lands are in jeopardy of being infected; and 4) requests for cooperative control.

Actions and restrictions to prevent and protect the forest resource from loss, based on the above requirements, include:

1. Silvicultural methods which manipulate species composition, density, and age to reduce chance of insect or disease infestation.
2. Prompt removal and salvage of diseased trees to prevent further infestations including selection cut, patch cuts, or clear cuts as directed by sound logging methods.
3. Application of pesticides as a last resort based on current EPA restrictions on chemicals and in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act of 1972 (FIFRA).
4. Introduction of biological control when economically and ecologically feasible.



The BLM will cooperate with private and public landowners or group projects in controlling noxious weeds on public lands.

25. Use Applications

A. General - Applications for various uses will be processed on an individual basis. Each will be analyzed for:

1. Adjoining land uses
2. Legal access
3. Conflicting resource values
4. Public need
5. Highest and best use of the land
6. Coordination with state and county agencies (eg. land use plans, zoning authority)

All will be handled in a timely manner with targeted response time as follows:

1. Rights-of-Ways - 30-60 days, plus 45 day comment period
2. Leases (R&PP & 302) - 130-150 days
3. Permits (TUPs) - 15-45 days

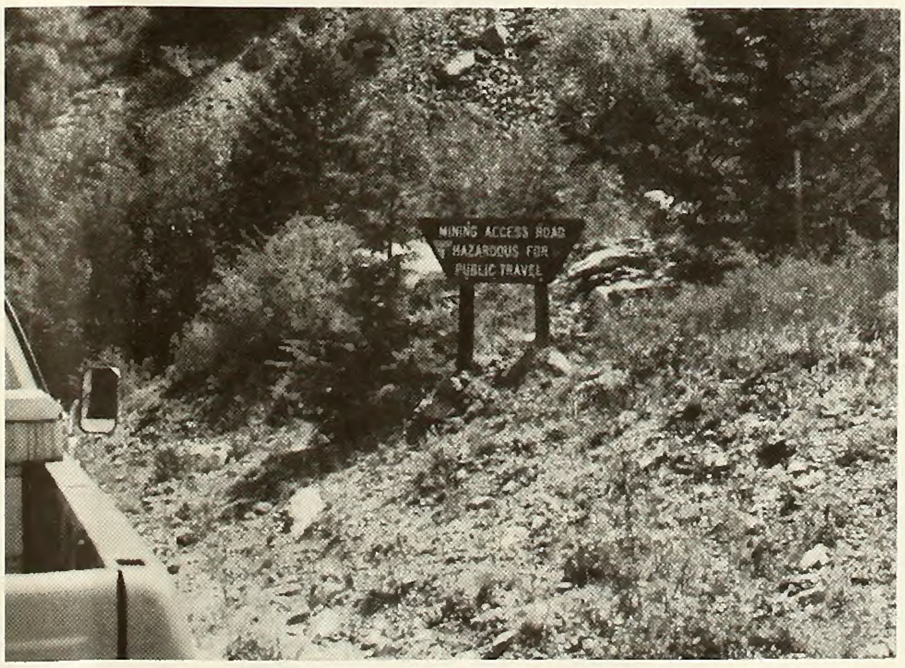
26. Public Information

A. General - Signing, publicity campaigns, making maps available, and educational exercises may be used to increase public knowledge of public land use and location.

Areas having legal public access will be signed according to the following criteria:

1. Where public recreational opportunities exist without conflict with other resource uses lands will be signed along all boundaries.

2. Those lands which do not meet objectives of item (1) above will be marked at the road or trail entrance and exit of the public land.



27. Unauthorized Use

A. General - The elimination of unauthorized uses of the public lands is an ongoing objective. A Trespass Action Plan has been prepared and guides the abatement program. This plan includes a number of policies for detection, confirmation and elimination of trespass. Briefly the actions to be taken are:

1. Cooperate with other agencies.
2. Inform the public.
3. Treat all affected people impartially and fairly as to not cause undue hardship.
4. Collect a fair rental for the use or benefit derived.

First priority is the abatement of existing trespass (Occupancy and Uses). Second priority is to dissuade reckless acts of trespass through public education.

28. Economics

A. General - All management decisions shall consider three economic perspectives.

1. Efficiency - The usefulness of inputs (costs) to produce outputs (benefits) shall be analyzed. Those actions with the higher efficiency rating shall be favored whenever possible.

2. Cost effective - When a goal or project has been identified, the most cost effective approach shall be favored whenever possible.

3. Local and Regional effects - The magnitude and distribution of costs and benefits shall be identified. Those actions benefitting the local and regional economies the most shall be considered. Additionally, the implementation of management decisions, where feasible and appropriate, which would mitigate adverse economic and fiscal impacts shall be considered.

29. Sociology

A. General - All management decisions shall consider three major social perspectives.

1. Community capacity to absorb change.
2. Social distribution of effects.
3. Attitudes toward change.

The degree of sociologic background data (profile) needed to analyze these three perspectives will vary according to the significance of the actions and effects. The following are profile factors:

- Community Resources
  - Historical Experience
  - Culture
  - Demography
  - Occupations (Livelihood) Labor Force
  - Employment and Income
  - Facilities Services Fiscal
  - Organizations and Regulations
  - Leadership
  - Attitudes and Perceptions

- Social Organization Processes
  - Diversity/Complexity
  - Outside Linkages
  - Distribution of Resources/Power
  - Coordination and Cooperation
  - Personal Interaction

- Well-being Indicators
  - Behaviors
  - Access to Resources
  - Perceptions

PLAN ALTERNATIVES CONSIDERED AND ANALYZED IN DETAIL

General Criteria used to Formulate Plan Alternatives - All alternatives meet the following general criteria.

a. All alternatives are realistic and could be implemented.

b. All alternatives consider other agencies' plans and policies.

c. All alternatives reflect the sustained-use principle for renewable resources.

d. Each alternative provides a set of answers to the issues identified (see Chapter 1, Planning Issues and Criteria).

e. All alternatives were developed using the planning criteria developed for each issue (see Chapter 1, Planning Issues and Criteria).

f. All alternatives address areas of critical environmental concern.

g. All alternatives comply with existing laws and BLM policies and regulations.

h. All alternatives utilize the findings of the Northeast Resource Area Oil and Gas Umbrella Environmental Assessment (CO-050-82-NE-10 April 1, 1982, case file C-24793) and amendments thereto.

Management Philosophy of Plan Alternatives - This section describes, by alternative, the major emphasis or themes of each alternative. It provides an overview of the management direction for each alternative by a description of the resource programs that are emphasized in each alternative. Refer to the Description and Comparison Chart at the end of this chapter for a more specific description and explanation of the alternatives.

A. Continuation of Current Management (No Action Alternative)

The Continuation of Current Management Alternative would manage resources at current levels. Any new proposals would have to be consistent with these levels. Generally project proposals are reviewed through the environmental assessment process on a case by case basis. Uses or actions are not developed or permitted according to any organized land and resource plan, allowing little consideration of cumulative impacts or the other potential uses of the same land.

Wildlife habitat of importance associated with Riverside Reservoir would be maintained or improved, particularly for the state threatened white pelican. Access to this reservoir would be obtained but no other areas would be specifically pursued. Scenic Quality would be of concern along the I-70 corridor west of Idaho Springs. Coal exploration and development would be emphasized in the Known Recoverable Coal Resource Areas of the Denver Basin. Oil and gas exploration and development would continue to be permitted and restricted as the present environmental assessment outlines.

B. Moderate BLM Retention and Increased Response to Issues

The BLM would take more action to resolve identified issues by designating lands with potential to appropriate uses to meet the demand. There would be more development projects, production sales/leases, protection actions, and use supervision. Lands that could be managed more efficiently by other agencies for their public values would be transferred (Forest Service and National Parks) or disposed of to the State of Colorado.

C. Limited BLM Retention and Response to Issues

The majority of lands would be transferred or disposed of, much of it by general sale. Lands retained would be managed much as they are currently. One exception would be Riverside Reservoir where increased wildlife management would improve habitat for the white pelican and other waterfowl.

D. Limited BLM Retention and Increased Response to Issues

Transfer or disposal of lands would be determined by identified resource values, improved management efficiency, and public input. Retained lands would have issues addressed at an increased level.

E. No BLM Retention (Preferred Alternative)

All lands with identified public values would be transferred or disposed of based on management efficiency generally to the USFS and the State of Colorado. The remaining lands would be disposed of to private interests by modified or general sale. In order to assure the eventual land status change from BLM administration this alternative would allow for general sale of any and all land if it is determined that the recommended change or disposal is unattainable. Specially, if after 5 years the recommended change fails to occur then general sale may be pursued.

Specific Description and Comparison of Plan Alternatives - In order to completely understand each alternative one must refer to the appendices B and C in conjunction with the issue management prescriptions as defined in the beginning of this chapter.

Appendix B, Multiple Use Management of Public Lands addresses the specific management of all 29 major issues for each alternative. The lands are numerically organized to refer to the maps by management zone.

Appendix C, Management of Subsurface Estate (Non-Federal Surface) addresses the specific management of the four applicable major issues: locatable minerals, coal, oil and gas, and saleable minerals for all alternatives. The subsurface estate is organized by legal description (section, township, range, and parcel subdivision) and the zones. Refer to the maps.

The Management Prescriptions: Criteria, Practices, Guidelines, Implementation, Support, and Monitoring found in the beginning of this chapter defines specifically the approach to management under the categories found in Appendices B and C.

The following chart may be used to review the descriptions of each alternative issue by issue and easily compare the goals, objectives, management description, prescription categories, and impacts.

Description and Comparison of Alternatives

A. Current Management	B.	C.	D.	E. Preferred
		Vegetation		
Grazing 5,710 acres/year. Forestry 35 acres/year. Mineral development 340-515 acres/year.	Grazing 5,430 acres/year. Forestry 35 acres/year. Mineral development 340-515 acres/year.	Grazing 4,630 acres/year. Forestry 20 acres/year. Mineral development 340-515 acres/year.	Grazing 5,390 acres/year. Forestry 25 acres/year. Mineral development 340-515 acres/year.	Grazing 5,390 acres/year. Forestry 25 acres/year. Mineral development 340-515 acres/year.
		1. Land Status		
BLM - 32,350 acres USFS - 2,860 acres NPS - 120 acres State - 0 acres Local - 0 acres Private - 770 acres General - 3,930 acres Sp. Review - 0 acres Total 40,030 acres	BLM - 21,570 acres USFS - 13,350 acres NPS - 0 acres State - 1,420 acres Local - 0 acres Private - 1,230 acres General - 2,460 acres Sp. Review - 0 acres Total 40,030 acres	BLM - 3,470 acres USFS - 2,860 acres NPS - 0 acres State - 4,310 acres Local - 2,450 acres Private - 0 acres General - 9,130 acres Sp. Review - 17,810 acres Total 40,030 acres	BLM - 4,970 acres USFS - 5,040 acres NPS - 120 acres State - 3,750 acres Local - 1,900 acres Private - 1,480 acres General - 6,070 acres Sp. Review - 16,700 acres Total 40,030 acres	BLM - 0 acres USFS - 23,640 acres NPS - 120 acres State - 6,820 acres Local - 1,900 acres Private - 1,480 acres General - 6,070 acres Sp. Review - 0 acres Total 40,030 acres
619,700 subsurface acres managed by BLM.	620,110 subsurface acres managed by BLM.	630,890 subsurface acres managed by BLM.	628,200 subsurface acres managed by BLM.	631,270 subsurface acres managed by BLM.
		2. Access		
Public access would be provided to 7,450 acres. No high public value land with existing access disposed of.	Public access would be provided to 12,420 acres. No high public value land with existing access disposed of.	Public access would be provided to 7,210 acres. 240 acres of high value public land with existing access disposed of.	Public access would be provided to 8,340 acres. 80 acres of high value public land with existing access disposed of.	Public access would be provided to 6,920 acres. 80 acres of high value public land with existing access disposed of.
		3. Wildlife Habitat		
31,820 acres managed to maintain or improve wildlife habitat.	32,020 acres managed to maintain or improve wildlife habitat.	23,480 acres managed to maintain or improve wildlife habitat.	26,580 acres managed to maintain or improve wildlife habitat.	26,580 acres managed to maintain or improve wildlife habitat.
Since 26,210 acres of excellent and good potential habitat will be under federal or DOW control this Alternative is the most beneficial for the greatest number of wildlife species.	Since 470 acres of excellent and good potential habitat less than Alternative A will be under federal or DOW control this alternative is slightly less beneficial to the wildlife resource.	Since 7370 acres of excellent and good potential habitat less than Alternative A will be under federal or DOW control this alternative is the least beneficial to the wildlife resource.	Since 4830 acres of excellent and good potential habitat less than Alternative A will be under federal or DOW control this alternative is less beneficial than Alternatives A or B but more beneficial than Alternative C.	Since 4830 acres of excellent and good potential habitat less than Alternative A will be under federal or DOW control this alternative is less beneficial than Alternatives A or B but more beneficial than Alternative C.
		4. Timber and Firewood		
2,170 acres available to harvest under the annual allowable cut. 15,470 acres open to limited harvesting, primarily salvage. 380 cords per year could be cut.	2,170 acres available to harvest under the annual allowable cut. 15,470 acres open to limited harvesting, primarily salvage. 380 cords per year could be cut.	1,650 acres available to harvest under the annual allowable cut. 12,130 acres open to limited harvesting, primarily salvage. 230 cords per year could be cut.	1,750 acres available to harvest under the annual allowable cut. 15,390 acres open to limited harvesting, primarily salvage. 257 cords per year could be cut.	1,750 acres available to harvest under the annual allowable cut. 15,390 acres open to limited harvesting, primarily salvage. 257 cords per year could be cut.
		5. Livestock Grazing		
5,580 acres leased, 2,040 of which would be disposed of. 26,070 acres would remain open to application and 30 acres closed.	5,580 acres leased, 1,800 of which would be disposed of. 17,300 acres would remain open to application and 5,530 acres closed.	5,580 acres leased, 3,840 of which would be disposed of. 18,670 acres would remain open to application and 30 acres closed.	5,580 acres leased, 1,600 of which would be disposed of. 13,980 acres would remain open to application and 11,060 acres closed.	5,580 acres leased, 1,600 of which would be disposed of. 13,980 acres would remain open to application and 11,060 acres closed.
14 operators possibly terminated.	12 operators possibly terminated.	21 operators possibly terminated.	14 operators possibly terminated.	Same 14 operators possibly terminated as Alternative D.

Description and Comparison of Alternatives

A. Current Management	B.	C.	D.	E. Preferred
6. Water Quality				
Floodplains protected on 290 acres. Pollution problem improved on 16,490 acres. Municipal watershed federally protected on 7,100 acres. No significant water quality degradation is anticipated except if major surface disturbance (mining) occurs.	Floodplains protected on 250 acres. Pollution problem improved on 16,490 acres. Municipal watershed federally protected on 7,100 acres. Water quality degradation would remain the same as Alternative A.	Floodplains protected on 100 acres. Pollution problem improved on 15,890 acres. Municipal watershed federally protected on 5,530 acres. Water quality degradation would remain the same as Alternative A.	Floodplains protected on 100 acres. Pollution problem improved on 15,950 acres. Municipal watershed federally protected on 5,680 acres. Water quality degradation would remain the same as Alternative A.	Floodplains protected on 100 acres. Pollution problem improved on 15,950 acres. Municipal watershed federally protected on 5,680 acres. Water quality degradation would remain the same as Alternative A.
7. Water Sources				
All 7 known sources will be retained by the BLM.	All 7 known sources will be retained by the BLM.	All 7 known sources will be retained by the BLM.	All 7 known sources will be retained by the BLM.	All 7 known sources will be transferred to the USFS.
8. Soil				
850 acres of concern would be managed to reduce erosion. 210 acres of Stable/Slight erosion hazard would be disposed of. Overall erosion from public land would be minimal, possible locally significant erosion if major surface disturbance (mining) occurs.	850 acres of concern would be managed to reduce erosion. 1,100 acres of Stable/Slight erosion hazard would be disposed of. Erosion from public land would remain the same as Alternative A.	850 acres of concern would be managed to reduce erosion. 900 acres of Stable/Slight and 200 acres of moderate erosion hazard would be disposed of. Erosion from public land would remain the same as Alternative A.	850 acres of concern would be managed to reduce erosion. 500 acres of Stable/Slight and 200 acres of moderate erosion hazard would be disposed of. Erosion from public land would remain the same as Alternative A.	850 acres of concern would be managed to reduce erosion. 500 acres of Stable/Slight and 200 acres of moderate erosion hazard would be disposed of. Erosion from public land would remain the same as Alternative A.
9. Agricultural Use				
100 acres with low potential would be closed to application.	23,090 acres with low potential would be closed to application.	100 acres with low potential would be closed to application.	27,570 acres with low potential would be closed to application.	27,570 acres with low potential would be closed to application.
10. Wildfire				
Cooperative agreements would protect all acres with wildfire potential (i.e. front range) 20,630 acres.	Cooperative agreements would protect all acres with wildfire potential (i.e. front range) 14,190 acres.	Cooperative agreements would protect all acres with wildfire potential (i.e. front range) 2,620 acres.	Cooperative agreements would protect all acres with wildfire potential (i.e. front range) 13,590 acres.	The USFS would take over protection of all the lands with potential in the front range.
11. Prescribed Buring				
Prescribed burning would be evaluated on a case by case basis.	Prescribed burning would be evaluated on a case by case basis.	Prescribed burning would be evaluated on a case by case basis.	Prescribed burning would be evaluated on a case by case basis.	Prescribed burning would be evaluated on a case by case basis.
12. Open Space				
No acres would be specifically protected. 80 acres of important open space would be disposed of.	15,250 acres in the front range would be maintained as open space. 1030 acres would be disposed of that important for open space.	No acres would be specifically protected. 1,800 important open space acres would be disposed of.	15,840 acres in the front range would be maintained as open space. 440 important open space acres would be disposed of.	No open space would be specifically protected although some would likely be provided. 440 important open space acres would be disposed of.
13. Scenic Quality				
2,330 acres would likely have their scenic quality reduced (from VRM Class III to IV).	2,250 acres would likely have their scenic quality reduced (from VRM Class III to IV).	930 acres would likely have their scenic quality reduced (from Class II to III) and 4,180 acres reduced (from Class III to IV).	2,570 acres would likely have their scenic quality reduced (from Class III to IV).	2,570 acres would likely have their scenic quality reduced (from Class III to IV).
14. Recreational Opportunity				
40 acres of SPNM land will be used as SPM. 9,180 acres of SPM will be managed to provide RN and R opportunities and 540 acres of R potential will provide U.	40 acres of SPNM potential will provide SPM opportunities. 1,640 acres of SPM potential will provide RN opportunites and 4,590 acres of RN potential will provide R opportunities.	8,860 acres of SPM potential will provide RN and R opportunities. 5,650 acres of RN potential will provide R opportunities. 540 acres of R potential will provide U.	40 acres of SPNM potential will provide SPM opportunities. 1,650 acres of SPM potential will provide RN opportunities.	40 acres of SPNM Potential will provide SPM opportunities. 1,650 acres of SPM potential will provide RN opportunities.
15. Cultural				
Minimal degradation	Minimal degradation	Minimal degradation	Minimal degradation	Minimal degradation
16. Paleontologic Values				
210 acres of low value would be adversely affected.	390 acres of low value and 560 acres of doubtful potential would be adversely affected.	390 acres of low value and 560 acres of doubtful potential would be adversely affected.	320 acres of low value and 240 acres of doubtful potential would be adversely affected.	320 acres of low value and 240 acres of doubtful potential would be adversely affected.
17. Geologic Features & Hazards				
No impacts.	No impacts.	Possible impact to one feature on 40 acres.	Possible impact to one feature on 40 acres.	Possible impact to one feature on 40 acres.

Description and Comparison of Alternatives

A. Current Management	B.	C.	D.	E. Preferred
18. Locatable Minerals				
Public land favorability rating 41.8%. 28,930 acres available and 8240 acres closed.	Public land favorability rating 41.8%. 28,340 acres available and 8830 acres closed.	Public land favorability rating 34.8%. 21,240 acres available and 15,930 acres closed.	Public land favorability rating 36.6%. 22,640 acres available and 14,520 acres closed.	Public land favorability rating 34.8%. 22,640 acres available and 14,520 acres closed.
Subsurface estate favorability rating 48.7%. 221,870 acres available and 91,280 acres closed.	Subsurface estate favorability rating 48.7%. 221,870 acres available and 91,280 acres closed.	Subsurface estate favorability rating 48.7%. 221,870 acres available and 91,280 acres closed.	Subsurface estate favorability rating 48.7%. 221,870 acres available and 91,280 acres closed.	Subsurface estate favorability rating 48.7%. 221,870 acres available and 91,280 acres closed.
19. Salable Minerals				
Public land favorability rating 45.8%. 28,570 acres open and 8600 acres closed.	Public land favorability rating 43.8%. 27,760 acres open and 9400 acres closed.	Public land favorability rating 45.8%. 28,570 acres open and 8600 acres closed.	Public land favorability rating 43.8%. 27,760 acres open and 9400 acres closed.	Public land favorability rating 43.8%. 27,760 acres open and 9400 acres closed.
Subsurface estate favorability rating 49.7%. 231,110 acres open and 81,580 acres closed.	Subsurface estate favorability rating 49.7%. 231,110 acres open and 81,580 acres closed.	Subsurface estate favorability rating 49.7%. 231,110 acres open and 81,580 acres closed.	Subsurface estate favorability rating 49.7%. 231,110 acres open and 81,580 acres closed.	Subsurface estate favorability rating 49.7%. 231,110 acres open and 81,580 acres closed.
20. Coal				
Subsurface estate favorability rating 82.3%. 273,530 acres leasable and 11,600 acres unleasable.	Subsurface estate favorability rating 82.3&. 273,530 acres leasable and 11,600 acres unleasable.	Subsurface estate favorability rating 82.3%. 273,530 acres leasable and 11,600 acres unleasable.	Subsurface estate favorability rating 82.3%. 273,530 acres leasable and 11,600 acres unleasable.	Subsurface estate favorability rating 82.3%. 273,530 acres leasable and 11,600 acres unleasable.
Public land open 380 acres.	Public land open 380 acres.	Public land open 380 acres.	Public land open 380 acres.	Public land open 380 acres.
21. Oil and Gas				
Public land favorability rating 26.1%. 17,040 acres leasable and 870 acres unleasable.	Public land favorability rating 24.4%. 16,750 acres leasable and 870 acres unleasable.	Public land favorability rating 26.1%. 17,040 acres leasable and 870 acres unleasable.	Public land favorability rating 24.4%. 16,750 acres leasable and 870 acres unleasable.	Public land favorability rating 24.4%. 16,750 acres leasable and 870 acres unleasable.
Subsurface estate favorability rating 90.3%. 290,230 acres leasable and 1,000 acres unleasable.	Subsurface estate favorability rating 90.3%. 290,230 acres leasable and 1,000 acres unleasable.	Subsurface estate favorability rating 90.3%. 290,230 acres leasable and 1,000 acres unleasable.	Subsurface estate favorability rating 90.3%. 290,230 acres leasable and 1,000 acres unleasable.	Subsurface estate favorability rating 90.3%. 290,230 acres leasable and 1,000 acres unleasable.
22. Air Quality				
Minor and temporary impacts.	Minor and temporary impacts.	Minor and temporary impacts.	Minor and temporary impacts.	Minor and temporary impacts.
23. Roads and Trails				
No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.	No significant impacts.
24. Pest				
Reduced problems.	Reduced problems.	Reduced problems.	Reduced problems.	Reduced problems.
25. Use Authorizations				
Processed on a case by case basis.	Processed on a case by case basis.	Processed on a case by case basis.	Processed on a case by case basis.	Processed on a case by case basis.
26. Public Information				
Base level of information.	Slight increase.	Slight increase.	Slight increase.	Transfer to USFS.
27. Unauthorized Use				
Case by case processing.	Case by case processing.	Case by case processing.	Case by case processing.	Case by case processing.
28. Economics				
Local and Regional: Indirect and direct employment might increase by 250-350 people if coal is developed. Other actions would have only minor affect on employment and local expenditures.	Local and Regional: Indirect and direct employment might increase by 250-350 people if coal is developed. Other actions would have only minor affect on employment and local expenditures.	Local and Regional: Indirect and direct employment might increase by 250-350 people if coal is developed. Other actions would have only minor affect on employment and local expenditures.	Local and Regional: Indirect and direct employment might increase by 250-350 people if coal is developed. Other actions would have only minor affect on employment and local expenditures.	Local and Regional: Indirect and direct employment might increase by 250-350 people if coal is developed. Other actions would have only minor affect on employment and local expenditures.
Minor insignificant impacts on national values.	Minor insignificant impacts on national values.	Minor insignificant impacts on national values.	Minor insignificant impacts on national values.	Minor insignificant impacts on national values.
Expected management costs would increase 17% from previous years.	Expected management costs would increase 18% from previous years.	Expected management costs for the first 5 years would increase 7 % from previous years, thereafter it would decrease by 3%.	Expected management costs would increase 15% from previous years.	Expected management costs for the first 5 years would increase 6% from previous years, thereafter it would decrease by 67%.

A. Current Management	B.	C.	D.	E. Preferred
		29. Sociology		
14 ranch operators would be involved in land sales. Actual social impacts would be minor except for potential coal development (see economics).	12 ranch operators would be involved in land sales. Actual social impacts would be minor except for potential coal development (see economics).	21 ranch operators would be involved in land sales. Actual social impacts would be minor except for potential coal development (see economics).	14 ranch operators would be involved in land sales. Actual social impacts would be minor except for potential coal development (see economics).	14 ranch operators would be involved in land sales. Actual social impacts would be minor except for potential coal development (see economics).

NOTE: Refer to specific impact analysis in Chapter IV for detailed discussion.

HOW THE PREFERRED PLAN ALTERNATIVE WAS SELECTED

The Preferred Alternative was developed by the State Director, District Manager, Associate District Manager, Area Manager, team leader, and appropriate team specialists.

The Preferred Alternative was selected based on (1) issues raised throughout the planning process, (2) public input received at meetings, workshops, and in response to newsletters, (3) a set of decision criteria, and (4) the environmental analysis developed on the previously-formulated alternatives.

Specific Criteria used to Select Preferred Plan Alternative - Prior to selecting the Preferred Alternative, the BLM managers drafted decision criteria to be used as considerations in selection of the proposed management actions. The criteria were mailed for comment to other federal, state, and local agencies, groups, and individuals interested in the resource management plan. Based on comments received, the criteria were revised and condensed. During consideration of these criteria and selection of the preferred alternative, the overriding goal of more efficient management and administration of the public lands was formulated. Complete transfer or disposal is a means of achieving this goal. Transfer of all high public value lands to the U.S. Forest Service and other public agencies was selected as part of the preferred alternative to achieve this goal. The management of subsurface estate would remain with the BLM as that responsibility cannot be transferred from the Department of the Interior under current law. Following are the condensed criteria that were considered in selecting the Preferred Alternative. The order does not indicate priority.

1. Recommendations should agree as much as possible with the approved goals of state and local governments and other federal agencies, except as those goals conflict with the laws, regulations, and policies directly governing BLM management actions.

2. Recommendations should protect fragile and unique resources. Special attention will be directed toward municipal watersheds, endangered species' habitat, highly erosive soils, high quality scenic areas, and other fragile and unique resources.

3. Recommendations should be sensitive to the expectations of the local populace regarding both the use of public land and the management of these lands and public issues and management concerns identified through the scoping process. The local populace often has strong, but not necessarily uniform, feelings about natural resource issues. These feelings should be reflected in the Preferred Alternative.

4. Recommendations should promote the stability and diversity of local and regional economies. Recommendations affecting the supply and production of economic goods should take into account the current and expected demand for the good, its dependence on public land and subsurface estate, and its contribution to general economic conditions.

5. Recommendations should be responsive to resource issues of national concern. Issues that receive national attention, such as energy production or the allocation of wilderness, will be dealt with according to the policies and directives of the BLM.

6. Recommendations should not overly or unnecessarily restrict the public's use of public land and subsurface estate. Restrictions on the use of public land will be placed where need is demonstrated or where required by law, regulation, or the physical limits of the land.

7. Recommendations should provide for improved management and cost efficiency of the public lands and subsurface estate resources.

OPTIONS AND ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

During the entire planning process the team and managers considered numerous options for specific issues and general plan alternatives but determined them to be unreasonable, inappropriate, or for some other reason not qualified for detailed analysis. This was a must because of the need to keep choices to a managable and comprehendable number as authorized by the National Environmental Policy Act of 1969. It is also understood that a RMP allocates lands and resources for various uses and that specific projects and their design is planned on site specific basis in conformance with the RMP. Therefore many decisions; such as access routes, wildlife projects, fuelwood sales, water or soil protection practices, recreation site design, mine plan, etc.; are not made at this level of resource planning. They are analyzed in detail and decisions made case by case.

Major plan alternatives considered but eliminated from detailed analysis in this document were:

1. No active management was considered for all issues but was determined to be unrealistic nor would it be implementable. Public demand and past use dictates that some active management occur. The concept of not managing the public resources (coal, forest, soils, recreation, etc.) is contrary to the Federal Land Policy and Management Act of 1976, in particular the requirement to manage the public lands for multiple use and sustained yield.

2. Maximum active managment was considered for all issues but was determined to be unrealistic nor would it be implementable. The conflicts between management actions would necessitate single or near single use on most areas. There would be a significant amount of resource values lost creating unacceptable impacts. An expectation that sufficient funding for such intensive management is unrealistic. This type of managment would be contrary to the Federal Land Policy and Managment Act of 1976 in particular the requirement to manage the public lands for multiple use and sustained yield. Alternatives for the subsurface estate were considered but not developed. Surface owner consultation and coordination is considered to be a major prerequisite to management proposals so that even the present management decisions must be considered tentative. In the case of coal (except for preference right lease applications, PRLA-see glossary), qualified surface owners must give written consent before a lease can be issued. For oil and gas, generalized alternatives ranging from unlimited leasing to no leasing whatsoever were analyzed in the Umbrella Environmental Assessment. Regulatory and surface owner's agreements are required before drilling takes place. Limitations impede the federal land manager from becoming involved to any large extent with locatable mineral operations on reserved subsurface estate. Salable minerals management on split estate lands must also be heavily influenced due to surface owner requirements. For these reasons Appendix C represents the apparent management situation.

CHAPTER III · AFFECTED ENVIRONMENT

GENERAL SETTING

A general description of the Resource Area is found in Chapter I-Introduction. A more specific description is contained in this chapter.

The affected environment is described in this chapter. The components of the environment are affected by the land and resource allocation decisions that are made for the 29 issues in the alternatives. A basic explanation of some components are presented for the readers general understanding. For all components, specific inventory data is retained in either the Northeast Resource Area office or other appropriate office.

CLIMATE

The Resource Area's climate varies considerably, depending on elevation. Precipitation generally increases with elevation, except for the eastern half of the Resource Area, where it gradually increases eastward toward Kansas and Nebraska. Mean annual amounts range from 11 inches at Greeley to nearly 25 inches at Ward; east of Greeley it increases to about 18 inches at the Nebraska border. Much of the precipitation in the mountains falls as snow in the winter and spring. The plains receive 70 to 80 percent of its precipitation as rain during the late spring and summer growing season. Average annual snowfall ranges from around 20 inches on the plains to over 120 inches in the mountains. Even though total snowfall is less than in the mountains, typical cold air outbreaks from the north sometimes cause blizzards on the plains. Average length of the growing season varies from 160 days at Bonny Reservoir to 70 days or less at the higher elevations. Annual mean surface Fahrenheit temperature ranges from the low 50's in the Denver-Boulder area and the border with Kansas to about 40° in the mountains, while extremes of nearly -40° to 110° are possible. Winter inversions can cause the western valleys to be much cooler than the surrounding higher areas, and diurnal temperature changes can be as much as 50°, due in part to downslope, warming chinook winds in the winter and solar heating during the warm season.

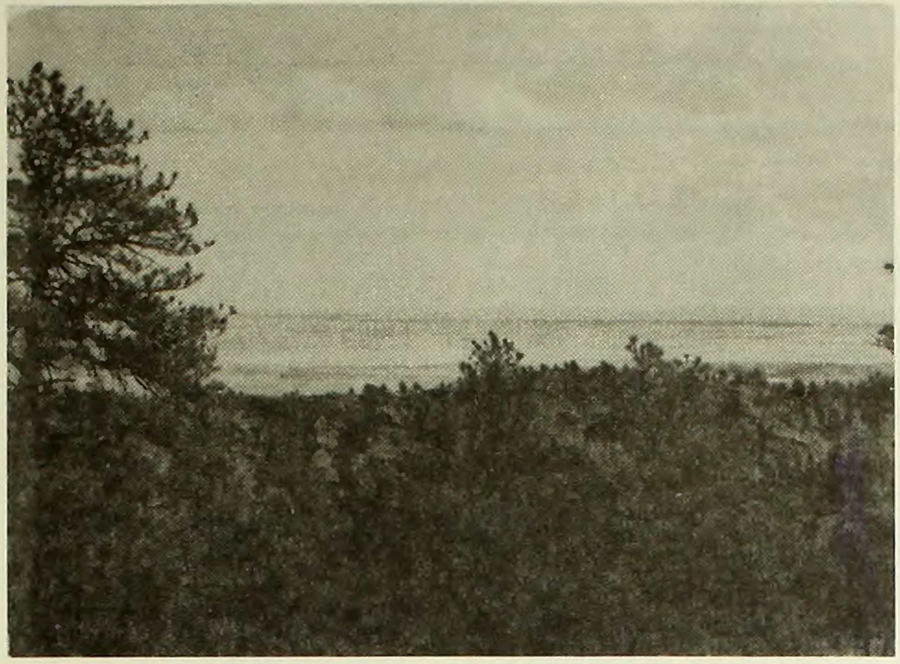
TOPOGRAPHY

The Northeast Resource Area can be divided into three areas on the basis of topography: mountains, foothills, and plains.

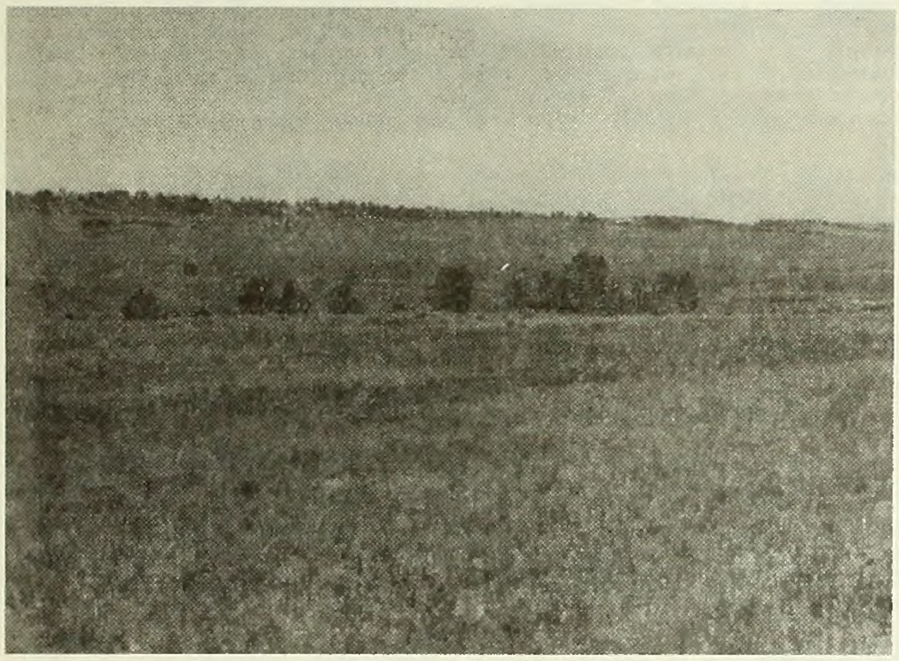
The mountainous area is a part of the eastern slope of the Front Range and occupies the western edge of the Resource Area. Western portions of Gilpin, Clear Creek, Larimer, Boulder, Jefferson, Douglas and El Paso Counties are included in this area. Elevation ranges from 6,000 to over 11,000 feet with local relief often exceeding 1,000 feet. This relief is caused by differential erosion of the Precambrian rocks that form the core of the Front Range. Named mountains on public land over 10,000 feet include Lincoln, Red Elephant Hill, and Alps. Several prominant canyons cut by eastward flowing streams include South Platte, Clear Creek, Eldorado, and Boulder. Slopes of the public land in this area are for the most part steep, averaging around 50%.

The foothills occupy an area along the boundary between the plains and mountains. Steeply tilted sedimentary rocks form the hogbacks and flatirons that are so prominent on the east slope of the Front Range. Elevations within this zone range from 5,600 feet to 8,500 feet.

Characterizing most of the land within the Resource Area boundaries are the plains. Flat to gently rolling topography is predominant. In a few areas, such as the Chalk Bluffs of Weld and Logan Counties, northeastern Elbert County, and central Douglas County, canyons, buttes, mesas, and escarpments interrupt the plains.



Elevations range from 3,400 feet to 7,400 feet. The highest elevations in the plains province are found in an area known as the Palmer Divide. Located northeast of Colorado Springs, where Douglas, Elbert, and El Paso Counties meet, it forms a drainage divide between the South Platte and Arkansas Rivers. Nearly flat-lying sediments of the Cretaceous, Tertiary and Quaternary Periods give the plains their characteristic topography.



VEGETATION

The specific vegetation occurring on public lands or subsurface estate in the Resource Area has never been completely inventoried and mapped. The forested lands in Management Zones 5,6,7,8, and 9 have been inventoried as part of the Timber Production Capability Classification (TPCC). The rangelands have not been inventoried.

Major vegetation types occurring are plains grasslands, foothills grasslands, riparian, and forest lands. An additional type found in the Resource Area, but not BLM administered, is alpine vegetation. Croplands also occur (see Agriculture section).

The plains grasslands are primarily shortgrass in the western portion of the Resource Area dominated by blue grama and buffalo grass. As you move eastward, toward Kansas and Nebraska, the vegetation changes to a sandsage-bluestem prairie of medium tall grasses with a strong element of small shrubs. Dominant species in this region include little bluestem, sand bluestem and sandsage. This vegetation type covers most of the Public Lands in Management Zones 1,2,3, and 4.

Foothills grasslands and mountain scrublands occupy the transition zone between the plains grasslands and forest types. They are typified by various species of wheatgrass, brome, needlegrass and several forbs. An obvious characteristic of this type is the occurance of stands of ponderosa pine and various shrubs, notably gambel's oak and mountain mahogany.

Riparian vegetation occurs along streams, drainageways and around reservoirs. Larger streams and rivers with wide floodplains support overstories of cottonwoods and understories of willows, water-tolerant grasses and sedges. Willows also occur along narrower stream channels and in the foothills river alder often occurs in association with willows. Public Lands in Management Zone 3 and the Front Range Zones 5-9 have the majority of the riparian vegetation, with the other Zones having very little or none of this vegetative type on Public Land.

Forested lands are predominately ponderosa pine and Douglas fir (for other species see Forestry section). The types occur in Management Zones 5-10.

The other major vegetative type found in the Resource Area, but not on Public Land is alpine. This type is characterized by short grasses and sedges with many forbs. Dominants include bentgrass, sedges, fescue and mountain timothy.

No threatened or endangered plant species have been identified on BLM administered lands in the Resource Area. The only portion of the Resource Area having a completed T&E plant inventory is Zone 1.

LAND STATUS

There are currently 37,170 public land acres in the NERA. An additional 2,860 acres is managed by the USFS by a cooperative agreement. In addition there are 615,000 subsurface estate acres. Current usage and resources on these tracts are located within each resource section. Federal law allows additional land to be purchased when a need is established and funds are available, or lands may be sold when it is in the national interest.

ACCESS

At this time access to 10,621 acres of public land exists. This access includes public roads, federal and county, and existing easements. Access to additional lands can be obtained when a need is determined and funds are available.

WILDLIFE HABITAT

The wide variety of habitat types occurring in the Resource Area results in many wildlife species occupying BLM administered land. Emphasis has been placed on threatened and endangered species, game species and species of high interest to state or federal agencies. A list of these species can be found in Appendix A. Over eighty species fall into these categories.

The terrestrial inventory effort has, for the most part, been a compilation of information from the Colorado Division of Wildlife. Very limited on-the-ground inventories have been conducted in specific areas for certain purposes (e.g. inventory in the Denver Coal Basin to apply the unsuitability criteria for coal leasing.)

The aquatic inventory has been more specific. Macroinvertebrates have been collected on Bard, Left Hand and South Clear Creek. Habitat Quality Index inventories were conducted on Bard, Mill and South Clear Creek.

Level 1 inventory, as defined in the 6671 manual, and instream flow measurements were conducted on all reaches of Clear Creek, Bard, Mill, Deer, Boulder and Left Hand Creeks and Fall River.

Inventory data on the South Platte reservoirs was obtained from the Colorado Division of Wildlife while the Ft Collins Reservoirs studies were a joint effort. This data is similar to BLM's Level 1 aquatic inventory.

Large Mammals

Mule deer, white-tailed deer, pronghorn antelope, elk, and bighorn sheep are the most common big game species found on BLM administered land in the Resource Area. White-tailed deer are found primarily along major drainages on the eastern plains while mule deer also occur along smaller drainages with established riparian zones and in the Front Range. Public land provides important winter range for mule deer in Zones 5-9. Elk also winter on the BLM administered lands in the Front Range but generally stay on higher elevations than mule deer.

The major concentration areas of bighorn sheep in the Resource Area are the area from Dumont to Silver Plume along I-70 and the Waterton Canyon herd (managed by the Forest Service through a Cooperative Agreement).

Pronghorn are located in Management Zones 1-4 and 10 with major concentrations in the Pawnee Grasslands of Zone 4, and in Management Zone 1 north of Big Sandy Creek, and Management Zone 2 south of I-70 bounded approximately by Limon, Seibert, Kit Carson and Karval.

Birds

The large irrigation reservoirs on the Eastern Plains provide nesting areas for thousands of ducks and geese. Aerial winter counts conducted by the Colorado Division of Wildlife since the winter of 1976-77 have averaged a total of 68,000 ducks and 17,000 geese on Riverside, Empire, Jackson and Bijou Reservoirs and the South Platte River from Riverside to Prewitt Reservoirs.

Upland game birds in the Resource Area include pheasants and bobwhite quail along the major drainageways in the Eastern Plains, and wild turkey along the Front Range. Greater prairie chickens, a state endangered species, occur along the eastern border of Colorado. A major concentration area is located north of Eckley and Wray in Yuma County. The population was estimated at approximately 600 birds in 1978, but intensive surveys in eastern Colorado in recent years seem to indicate a larger range than was thought in 1978.

The prairie sharp-tailed grouse, state-endangered, also occurs in the Resource Area but there is no BLM administered land within its occupied range. The Denver Coal Basin lies east of the occupied range and should not cause any direct effect on the existing population. It, however, does fall within the habitat if the birds were to expand their range. The estimated population in 1978 was 150-300 birds.

The white pelican, a state-threatened species, nests on Public Land at Riverside Reservoir. This is the only nesting site in Colorado for these birds and an average of 400 pairs nest there every year. The pelicans feed on Riverside and other large reservoirs along the South Platte River including Barr Lake, Empire, Jackson and Prewitt Reservoirs.

Bald eagles, Federally endangered, also winter in the Resource Area primarily along the South Platte River and its associated reservoirs. Major reservoirs which support wintering populations of bald eagles include Riverside, Empire, Prewitt, Jackson, Sterling, and Julesburg. Prewitt normally has the highest concentrations of eagles and Sterling the least. The midwinter count in January 1982 resulted in a total of 62 birds sighted on the six major reservoirs.

Peregrine falcons, Federally endangered, nest in the Resource Area but the only reported nesting site on public land is at Cathedral Spires in Management Zone 9. The site has not had a peregrine nest since the late 1970's. Prairie falcons nested there in 1982 but the site was not occupied in 1983. Hunting areas for peregrines nesting at this site were identified upstream of the town of South Platte on the North Fork of the South Platte River and its tributaries.

Several other nongame birds of interest nest on BLM administered land in the Resource Area, particularly at Riverside and other reservoirs. These include great blue herons, double-crested cormorants, snowy egrets, cattle egrets and black crowned night herons.

Songbirds and Small Mammals

Songbirds and small mammals are abundant in the Resource Area with many species represented due to the wide variety of habitat types found in the area. Little specific data exists for occurrances of these species on BLM administered land. Generally, the Colorado Division of Wildlife Latilongs are utilized to determine if a particular species may occur in a given area.

Reptiles and Amphibians

Several species of both reptiles and amphibians also occur in the Resource Area. Like the songbirds and small mammals, there is very little specific information on these animals on BLM administered land. The more common species are the great plains toad, Woodhouse's toad, boreal chorus frog, leopard frog, plains spadefoot, tiger salamander, northern prairie lizard, and prairie six-lined racerunner. The snake attracting the most attention is the prairie rattlesnake.

The above species distribution discussions are derived from 1)Colorado Mammal Distribution Latilong Study 1982, 2)Colorado Bird Distribution Latilong Study 1982, and 3)Colorado Reptile and Amphibian Latilong Study 1981. These are all published and revised by the Colorado Division of Wildlife.

Fish

Two state threatened fish, the orangethroat darter and the Arkansas darter, occur in the Resource Area. The Arkansas darter is found in Big Sandy Creek and the orangethroat darter in the Republican and Arikaree Rivers.

Habitat for both warm and coldwater fish occurs on BLM administered land. The irrigation reservoirs on the Eatern Plains provide habitat for game and nongame fish. There are several reservoirs managed primarily for recreational fishing. These include Black Hollow (bass, walleye, pike, catfish), Jackson (crappie, white bass, walleye, channel catfish), Prewitt (walleye, channel catfish, perch, crappie, white x striped bass hybrid), Sterling (walleye, channel catfish, crappie, white bass), and Julesburg (channel catfish, walleye, crappie). Riverside, in addition to game fish, has a large carp population which provides a food base for the white pelicans.

Several streams in the Front Range support coldwater fisheries. The major species are brook, brown and rainbow trout. The major waterways going through public land are Clear Creek, South Clear Creek, Bard Creek, Mill Creek, Fall River, Deer Creek, South Boulder Creek, Left Hand Creek, South Platte River and the Cache LaPoudre River. Two reservoirs associated with public land also support coldwater fish. Reservoir Number 15 has potential for a rainbow trout fishery and Halligan Reservoir provides a brown trout fishery.

TIMBER AND FIREWOOD

The forested lands in the Northeast Resource Area occur in Management Zones 5-9 along the Front Range. Public lands in this area are typically small, scattered tracts with no legal or physical access. Elevations range from 6,500' to 11,500'. The terrain is predominately steep and rocky with unstable soils and receives from 15-20 inches of rain per year. The predominant tree species found on these sites are ponderosa pine and Douglas fir with lodgepole pine, limber pine, sub-alpine fir and Englemann spruce also occurring.

Currently the timber management policy in the Northeast Area is to sell and remove forest products to 1) improve stand condition, 2) improve wood utilization, 3) minimize loss of wood, and 4) meet the demand for wood products. Demand for wood products in the Front Range far exceeds the supply. Approximately half the sale volume from public land in the Northeast Resource Area is to commercial loggers with the remainder sold to individuals cutting firewood for personal use. Timber sale areas are small and well defined. They are established using sound silvicultural practices, to ensure proper restocking of tree seedlings within 10-15 years of harvest. New road construction is usually not necessary because access roads are typically in existence, but legal access is often lacking. Excess logging slash is usually reduced by burning slash piles when snow is present. The current allowable cut per year is 200,000 board feet or 400 cords, but will be recalculated in 1984. There are currently over 2,200 acres of forest land available for harvest.

Forested lands in the area have been broken down into four categories as a result of the timber production capability classification inventory (TPCC). The "available" classification includes inventory classifications nonproblem and restricted. These are intensively-managed commercial forest lands which are available for timber harvesting. Approximately 2,251 acres of public land fall into this classifiction. "Unavailable" lands are less intensively-managed commercial forest lands which are in inventory classes, "withdrawn-fragile gradient" and "adverse location". Technology is not locally available to harvest these lands in an acceptable manner. There are 13,261 acres in this category.

Noncommercial lands are not intensively managed and are in inventory class, "withdrawn-low site". These timber lands are not very productive and cover approximately 3,000 acres.

LIVESTOCK GRAZING

The livestock industry is very prominant in some parts of northeastern Colorado, but the BLM's contribution to this industry in terms of Animal Unit Months (AUMs) is very small. There are currently 26 Section 15 leases on public land covered by this plan. The total acreage leased is 5,710 and total AUMs produced are 985.

The leases are all being managed on a custodial basis under standard stipulations of term permits. Most of the leases are under 10-year permits. No rangeland activity plans (Allotment Management Plans - AMPs), are presently written, active, or planned for the future. Size of leases, scattered land pattern, and percent public land within pastures or manageable units preclude serious consideration of formulating AMPs.

Results of custodial managment are largely unknown. Limited condition and trend studies were implemented on half the allotments in 1982 with the others scheduled to be started in 1983. This monitoring effort consists of general area photos and photo plots on public rangelands.

Historically rangeland improvements have been done by the livestock operators themselves under permit by the BLM. The first authorization of expenditure of Rangeland Improvement funds set up by the Taylor Grazing Act and the Murphy Act of Colorado was approved by the District Grazing Advisory Board in 1983. Cooperative projects such as fences and water developments are authorized on a case-by-case basis and Cooperative Agreements are drawn up between the BLM and the livestock operator.

New lease applications are processed by review through an Environmental Assessment for suitability using criteria regarding slope, distance from water, erosion potential, forage production, and land pattern. The applicant must first meet general criteria (CFR 4110) including being a U.S. citizen, being a commercial livestock operator, and have base property to support the livestock.

WATER QUALITY

Surface Water (Floodplains)

The Northeast Resource Area contains parts of three drainage basins (The South Platte, Kansas, and Arkansas Rivers). The South Platte River is the largest drainage feature in the resource area and flows in a general northeasterly direction from the town of South Platte on the southern end of Waterton Canyon to Julesburg at the Nebraska border. Major tributaries which head in the Front Range just west of the resource area are, from north to south, (The Cache LaPoudre and Big Thompson Rivers; St. Vrain, Boulder, Bear, Clear, and Plum Creeks).

The natural flows of the Poudre and Big Thompson Rivers, Boulder Creek, Clear Creek, and the main stream of the South Platte (upstream from the planning area boundary) are augmented by transmountain diversions from the Colorado River Basin.

Some northward flowing tributaries of the South Platte are Cherry, Box Elder, Kiowa, Bijou, Badger, and Beaver Creeks. Within the Kansas River Basin, streams flowing eastward into Kansas and Nebraska are Frenchman Creek and the Arikaree, Republican, and Smoky Hill Rivers. Within the Arkansas River Basin, streams flowing generally southeast-ward include, Fountain, Horse, Rush, and Big Sandy Creeks. All of these streams originate on the high plains.

Streams on the plains generally produce less than an inch of runoff per year. In contrast, streams originating in the mountains typically produce as much as a foot or more (Note: A foot of runoff equals one acre foot of water per acre of drainage area - an inch of runoff is 1/12th that amount). The plains streams often run dry, and flash floods are common. The mountain streams are perennial, and high water comes during the peak of the snowmelt season. When the plains streams flow, the water is usually turbid and relatively high in dissolved solids. The natural quality of the mountain streams is generally quite pure. However, several of the mountain streams have been polluted, notably Clear Creek and some of its tributaries. The principal cause of pollution is mining activity. Logging, road building, urbanization and land development also contribute to the problem.

Ground Water

Groundwater occurs in 3 basic types of aquifers in the NERA; alluvial deposits, fractured metamorphic and igneous rocks, and sedimentary rocks.

The alluvial aquifers are found in the valley bottoms, and are hydraulically connected with the streams. They range in width from less than 100 feet, near the headwaters of streams, to as much as 15 miles, along the South Platte in Weld County. Aquifer thickness ranges from a few feet along the smaller streams to as much as 200 feet along the South Platte near Wiggins. In the mountains, alluvial aquifers are used mostly for domestic and stockwater. On the eastern plains, wells in the alluvium yield large volumes of water, and are commonly used for irrigation.

The fractured metamorphic and igneous rocks of the foothills and mountains typically yield small amounts of good quality water. The extent of these fractured rocks is limited. However, where these aquifers do occur, they are important sources of domestic and livestock water.

The eastern plains are underlain by several sedimentary aquifers. These include the Dawson, the Denver, the Arapahoe, the Laramie-Fox Hills, and farthest east, the Ogallala. These aquifers are the primary source of water for the small towns, farms, and ranches of the plains. The Ogallala, and to a lesser extent, the Fox hills, are important sources of water for irrigation. The quality of water from these aquifers varies greatly, depending upon the chemical characteristics of the various water bearing beds. Coal is found in the Dawson, Denver, Arapahoe, and Laramie formations. In some places, there is groundwater in the coal beds.

WATER SOURCES

The earliest water rights in the area were acquired by farmers and ranchers. For many years, agricultural users were, by far, the largest consumers of water. Following World War Two, however, the towns and cities along the front range began to experience growth. The rate of growth has accelerated to the point that municipal and industrial users are now actively competing with agriculture for water. Most of the larger transmountain diversions have been built to help satisfy the water demands of cities such as Denver, Aurora and Colorado Springs. The demand for surface water outstrips the supply, and those with senior water rights hold valuable properties indeed.

The total annual surface supply in the Resource Area is about 2 million acre feet. Of this, about 70 percent is used by agriculture, and 30 percent by municipal, industrial, and other users. The BLM needs about 55 acre feet per year for administration of the public lands.

SOIL RESOURCE

The BLM administered lands in the Resource Area occur generally in three different landscapes. They are the high mountain areas, the foothills, and the uplands and plains areas.

The soils in high mountain areas occupy mountain slopes and ridgetops. The soils are interspersed with rock outcrops. Soils are formed in material weathered from a variety of crystalline and sedimentary rocks.
Soils in the foothills area occur on low mountain slopes, foothills and ridges formed by uplifted sedimentary rocks. The soils are developing in these sedimentary rocks and colluvium. Rock outcrops also occur throughout this area.
Soils in the uplands and plains occur on topography ranging from terraces and uplands to dunes. These soils are developed in wind-deposited material varying from silts to sands. Interspersed throughout this area are residual soils developing mostly from shales.

Some detailed soil inventory data is available. Fourteen counties in this Resource Area have been mapped and are published. In two additional counties, the mapping has been completed and they are scheduled for publication. One county is in the process of being mapped and will be completed by the end of the calendar year (1983). The portions of Clear Creek County and Lincoln County within this RMP have not yet been mapped in detail. Soils of Colorado (Colorado State University Bulletin #5665) contains soil information that is useable for planning at a general level for these two counties. This is the most detailed data available at this time. The detail of mapping for these inventories is moderate (Order II or III). Mapping units are mostly associations, complexes and co-association. Appendix A lists the soil inventory status for each county or survey area and where the information is available.

Upland erosion per se for this area has not been identified but a sediment yield map prepared by the Colorado Land Use Commission based on information by the USDA Soil Conservation Service in Denver, Colorado has identified sediment yield rates (map available in Northeast Resource Area Office). Sediment yield is defined and used by the Commission as the average annual amount of sediment from a square mile transported by water from sources into local water courses. This includes both upland erosions and channel erosion. Five classes of sediment yield have been identified but only three occur in the Resource Area. The three are: (1) very low yields - less than .1 acre ft/sq. mile per year or less than .3 ton/acre/year (using the average weight of soil at 90 lbs per cubic foot); (2) low yields - 0.1 to 0.2 acre feet/sq. mile/year or 0.3 to .6 tons/acre/year; and (3) moderate yields - 0.2 to 0.5 acre feet/aq.mile/year or 0.6 to 1.5 tons/acre/year. Though nothing offical has been established, a soil tolerance loss rate of approximately 2 ton/acre/year for upland erosion on non-cropland has been suggested by the Soil Conservation Service. Soil losses at this rate or less would have little effect upon vegetation production. Recognizing that the maximum rate of sediment yield identified in this Resource Area is 1.5 ton/acre/year and that the majority of the sediment yield results from channel erosion, the present upland erosion rates would be considered to have little effect upon production capacity in this area.

AGRICULTURAL USE

Croplands occur throughout much of the Resource Area with over six million acres in crop production in 1978. The majority of agricultural production occurs in Management Zones 1,2,3, and 4. Two major types of crops are raised. Dryland farming occurs throughout upland areas where soil fertility and topography are conducive to this pursuit. It is often interspersed with rangeland. The major crop produced by this method is wheat and the usual farming practice is crop alternated with fallow to conserve moisture.

Irrigated crops produced in the Resource Area include alfalfa, corn and sugarbeets. This method of farming occurs primarily along the major watercourses where perennial water is available and on upland sites where wells can be drilled for sprinkler irrigation. Large irrigation water storage reservoirs line the South Platte River and the Ogalalla aquifer provides water for sprinkler irrigation along the eastern tier of counties.

Nearly all agriculture occurs on private land in the Resource Area. Many thousands of subsurface estate acres are being farmed. Only two tracts of public land are currently farmed. One is an 80-acre tract in Management Zone 2 near Cheyenne Wells that is in dryland wheat production; and the other is 3 acres in Management Zone 3 adjacent to Bijou Reservoir that is being irrigated and is producing corn.

WILDFIRE

Wildfire is not a major problem in the Northeast Resource Area. Front Range counties are either covered by a cooperative agreement or memorandum of understanding for prevention and suppression of wildfire. The public land on the Eastern Plains has not historically needed protection. If a fire occurs, reimbursement may be provided to the appropriate suppression agency.

PRESCRIBED BURNING

All land in the Resource Area is currently classified as "open" for prescribed burning. Proposals for prescribed burning will be reviewed through the Environmental Assessment process to determine acceptability and to design the project. Current burning projects are limited to a reduction of fuel hazards and site preparation for reforestation.

OPEN SPACE

Open space is defined as "Areas of land relatively free from development, having a low percentage of surface covered by buildings or other impermeable surfaces and having a low permanent population". Values may be in the form of aesthetics, natural beauty, community well-being, reduction of public hazard and property damage, structuring development, air and water management, or recreational opportunities.

The growing urbanization of the front range has made some of the tracts valuable as a buffer or open space within a developed area. The following criteria were used in determining open space values:

1. Assist in the provision of adequate separation between communities along the front range; or

2. Be adjacent to or near, major highways along the front range, and also provide quality scenic vistas from these highways.

In land that meets one of the above criteria, it can be further evaluated by:

1. The probability of the land remaining "open",

2. Other attributes of the land such as important ecologic, historic, geologic and/or archaeologic values; and

3. The degree of threat to the land such that it would no longer meet the criteria.

Table III-1 indicates the open space values of public land.

TABLE III-1
Open Space Values

Value	Unit Numbers
General -	101 through 512 601 606 through 702 803 901 and 902 904 through 907 910 through 1003
Important - View from a road	801 and 802 804 through 821
Break in a subdivision	504 513 and 514 602 903 908
Natural view	603 through 605 909

SCENERY

Visual Resource Management (VRM) classes are used to define minimum scenic quality management objectives. Each of the 5 classes describe a different degree of modification allowed in the basic elements of the landscape so that the scenic character is retained. The following is a brief summary of each of the five classes.

Class I provides primarily for natural ecological changes but does not preclude very limited management activity. Any contrast created within the characteristic landscape must not attract attention. This class is applied to wilderness areas, wild and scenic rivers, and other similar situations.

Class II allows changes in any of the basic elements (form, line, color, texture) that does not become evident in the characteristic landscape. The contrast may be seen, but must not attract attention.

Class III permits contrasts to the basic elements (form, line, color, texture) to become evident and begin to attract attention. But they should remain subordinate to the existing landscape.

Class IV allows contrasts to attract attention and be a dominant feature of the landscape in terms of scale, but should repeat the form, line, color, and texture of the characteristic landscape.

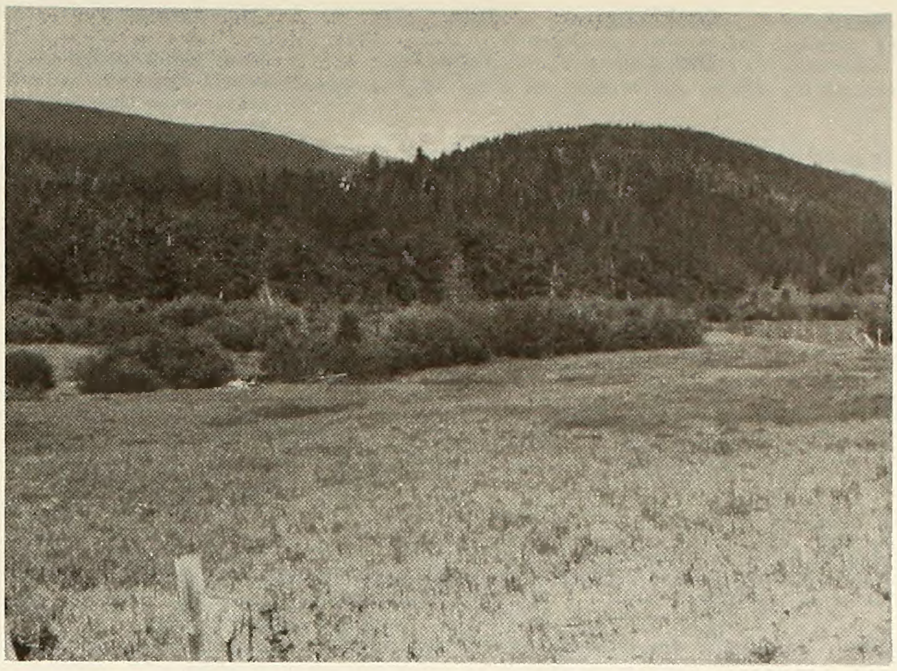
Class V is applied to areas where change is needed or change may add acceptable visual variety to an area. This class applies to areas where the naturalistic character has been disturbed to a point where rehabilitation is needed to bring it back into character with the surrounding landscape. This class would apply to areas identified in the scenic evaluation where the quality of the class has been reduced because of unaccepable cultural modification.

For simplicity, Classes I & II can be considered "outstanding" scenery within the region of study, Class III is "characteristic" scenery, and Classes IV & V are "minimal" scenery because of lack of variety or due to the presence of distracting intrusions.

Table III-2 lists the VRM classes assigned to public lands.

TABLE III-2
VRM Classes

Class	Units
I	None
II	503 510 606 801 and 802 804 through 821 902 909 and 910 1003
III	201 through 206 213 302 through 308 311 through 317 502 504 506 through 508 511 513 through 605 701 and 702 803 905 through 908 1002
IV	101 207 through 212 214 through 301 309 and 310 401 through 501 505 509 512 901 through 904 1001



RECREATION OPPORTUNITIES

The Northeast Resource Area includes the most populated area of Colorado. However, the small quantity of public land and the scattered nature of the tracts have resulted in little dependence on BLM for recreation. The recreation opportunities (i.e. activities and settings) on public lands are generally not significant in meeting Front Range user's recreation opportunity needs. Similar types of activities and settings exist on other public and/or private lands in the Area. The majority of public lands have little potential for intensive recreation.

Table III-3 indicates the current activities, potential activities, and recreation opportunity spectrum (ROS) classes for public lands. The ROS system arrays three components along a spectrum or continuum (activity, setting, experience). The ROS is based upon empirical data that demonstrates that users exhibit preferences for activities, settings, and resulting experiences in their recreational pursuits. A spectrum of recreation opportunities has been defined based on variations in settings, which also influence the nature of available activities and the resulting subjective experiences of the user. These settings and associated activities determine potentials for providing particular types of recreation (i.e. supply), settings, and experiences. Likewise, user preferences for these settings and associated activities can also be determined (i.e. demand).

Variations in environmental setting are arranged on a spectrum from total resource dependence to total facility dependence, and six specific ROS classes have been identified at various points between. All land areas fall into one of these six ROS classes, and all users exhibit preferences for recreation opportunities in one or more of these ROS classes.

The following diagram illustrates the ROS

SETTING OPPORTUNITIES

P	SPNM	SPM	RN	R	U
(Primi-tive)	(Semi-Primitive Non-Motorized)	(Semi-Primitive Motorized)	(Roaded Natural)	(Rural)	(Urban)

The first step taken to determine the activity opportunity is to complete a capability classification to delineate generally homogenous land units which in the ROS system are called "Ecological Land Units" or ELUs.

In addition to the activity letter each ELU is classified into one of seven capability classes based on the total resource values and recreation activities combined. Those on the upper end of the scale (1,2..) are the most highly valued while those on the lower end (..6,7) can provide only for dispersed use. The numerical rating is the collective average sum of all the activities (subclass ratings) provided in the unit, rather than any one separate activity.

Class	Capability	Type of Use	Other Characteristics
1	Very High	Intensive	Among the most highly valued resources/ features in the state.
2	High	"	
3	Moderately High	"	
4	Moderate	Dispersed	
5	Moderately Low	"	
6	Low	"	Lack natural attractiveness or present severe obstacles to their use.
7	Very Low	"	Little capability; may merely provide open space.

The following table identifies the primary recreational use, ROS setting, activity and class.

TABLE III-3

Recreation Oescriptors

UNIT	CURRENT ACTIVITIES	ACTIVITY OPPORTUNITIES	ROS CLASS SETTINGS
101	MHV	70	RN
201		7K	R
202	VH,O	6KO	SPM
203		*	SPM
204	MVH	60	SPM
205	MVH	60	SPM
206	MVH	*	SPM
207	MVH	*	SPM
208	MVH	*	SPM
209	MVH	*	R
210	MVH	60	SPM
211		*	RN
212		*	RN
213		*	RN
214	VH	60	RN
215	VH	60	RN
216		*	SPM
217	VH	60	SPM
218	VH	60	RN
219	VH	60	SPM
220	VH	60	SPM
221		*	SPM
222	VH	60	SPM
223	VH	60	RN
224	VH	60	RN
301	F,BW	4BA	RN
302	F,H	5BA	SPM
303	F	7AO	RN
304	FH,W	4BAD	RN
305	FH	3AO	RN
306	FHW	4BA	RN
307	V(white pelican)KF	3WBA	RN
308	FVH	4WBA	RN
309	FVHW	3AWB	RN
310	MVH	60V	SPM
311		6BW	SPM
312	MVH	5WO	SPNM
313	FVHWPC	4WAB	RN
314	MUHF	5WA	SPM
315	FVHCW	4AWB	RN
316	MVH	4WO	SPNM
317	FV(white pelican)H	3AWD	R
401	VH	5KO	RN
402	MVH	5J	SPM
403		70	SPM
404		60	RN
501		*	RN
502			RN
Cherokee Pk.	VH	40N	
Halligan Res.	VHFC	4AOB	
503	H	60K	RN
504	MVH	60	RN
505	MVH	60	RN
506	VH	60	RN
507	MVH	50L	RN
508	GF	4LAV	R
509		60	RN
510		*	RN
511	MV	60R	RN
512	MVH	60Q	RN
513			RN
St. Vrains	VH	60Q	
Lyons	VH	70Q	
514	MH	70	RN
601	MV,F	6A,4F	RN
602			RN
Beaver Ponds	MCV	4MO	
ORV Hill	Now closed to ORV	4QV	
RR Bed	A	3H	
Ward	MHV	50N	
603			RN
Gold Hill		3H	
Mining Area	R	4HJ	
Emancipation Hill		50	
Four Mile	V	40	
604	V	50	RN
605	WV,F	4ACO,40K	RN

Cont'

UNIT	CURRENT ACTIVITIES	ACTIVITY OPPORTUNITIES	ROS CLASS SETTINGS
606			SPM
Boulder Creek	FVH	4AC	
Hogback	V	40Q	
701	XV	4KO	RN
702	VH	5QOR	SPM
801	RVHE	4JO	U
802			R
Fall River	F	4A	
Mile Creek	F	3A	
Dumont Arrastra		3HM	
808	RVH	5HJO	R
809	RVH	5HJO	R
810	RVH	4HOJ	R
811	RVH	4HOJ	R
812	RVH	4HJO	R
813	HXRVH	5A,4KHO	RN
814		5OH	R
815	VH	4OH	R
816	S	5A	U
817	VH,A	4HOJ	R
818	VH	40	V
819	S	5A	R
820	S	5A	R
821	S	5A	R
901	V	5ON	RN
902	V	5OZ	R
903	F	5AOP	RN
904	H	6OE	RN
905		*	RN
906		*	RN
907	H	60	RN
908		70	RN
909	V	3ROV	SPM
910	V	3ROV	SPNM
1001		*	R
1002		*	R
1003	MVH	60	SPM

* = area is submerged or too small to rate.

CODES

Current Activities	Activity Opportunities[1]	ROS Class Settings
A = Historical Viewing	A = Recreational Fisheries	P = Primitive
B = Boating	B = Beach	SPNM = Semi-Primitive Non-Motorized
C = Camping	O = Units on Deeper Water	
E = Equestrian	E = Vegetation of Recreational Significance	SPM = Semi-Primitive Motorized
F = Fishing	F = Waterfalls and Rapids	RN = Roaded Natural
G = Geologic Interpretive	H = Cultural Resources	R = Rural
H = Hunting	I = Collectable Rocks	U = Urban
K = Hiking	K = Access to recreation Areas	
M = Minimal[2]	L = Land Forms	
P = Picnic	M = Units on Small Surface Waters	
R = Rockhounding	N = Extensive Upland Units	
S = City Water Supply	O = Upland Wildlife	
V = Wildlife Viewing	P = Cultural Landscape	
W = Water Sports	Q = Topographic Configuration	
X = Cross Country Skiing	R = Rock/Geologic Formation	
	V = Vantage Points	
	W = Water and Wildlife	
	1 = Very High 2 = High 3 = Moderately High 4 = Moderate 5 = Moderately Low 6 = Low 7 = Very Low	

1. The reader should note that these are resources with potential recreation, whereas current activities indicate what activities occur.

2. Minimal means all subsequent activities on the same line preceding a comma occur rarely.

In addition to impacts from public lands, recreation takes place on private land over subsurface estate and is affected by BLM policy. These areas have limited recreation value or opportunity for BLM recreational development since use is controlled and usually limited by permission of the private surface owner. Recreation types are primarily limited to hunting, wildlife viewing, and ORV use.

The recreation opportunities (i.e. activities and settings) on public lands in the Northeast Resource Area are generally not significant in meeting Front Range user's recreation opportunity needs. Similar types of activities and settings exist on other public and/or private lands with very few exceptions. The State Comprehensive Outdoor Recreation Plan (SCORP) provides an inventory of private and public land recreational opportunities with some demand analysis. It provides an overall user profile analysis in conjunction with recreational settings and opportuniites. The aforementioned exceptions include areas which provide unique recreational settings, for example, Pelican Island (Unit # 307). This area provides viewing (V) of white pelicans in a Roaded Natural (RN) setting which is rare and unique to the entire region. Front Range residents are the primary users of this area. Due to the limited amount of this opportunity it is of high value to wildlife viewers. Other units which provide such exceptions for specific activity and/or opportunities on public lands are: Units 301, 302, 304, 306, 308, 309, 313, 315, and 502 which provide public beach and boating activities. Units 808-812 offer unique historical viewing. Units 701 and 813 offer cross country skiing which is limited in opportunity settings on public land in the area. Those lands in Zone 5 which lie adjacent to Forest Service lands provide public access to the US Forest Service trail system. For a more detailed description of these areas see Table III-3.

There is minimal ORV use in the resource area except for occassional use in Units 5-9. Most BLM lands are of limited ORV desireability due to any or all of the following conditions: steep, rocky and otherwise limiting terrain, too flat and unappealing topography, lack of legal access, and too small an area for use.

Ward Hill Unit 602, was closed to all ORV use in April, 1980 because of resource damage on its steep-sided hills created by over-use of ORVs. ORV users were trespassing upon adjoining private lands and the land owners requested our assistance. An emergency closure notice was published in the Federal Register on April 9, 1980.

CULTURAL (Archaeologic and Historic)

The resource area exhibits a broad spectrum of prehistoric (archaeological) remains spanning a period in excess of 12,000 years. These sites include occupation from pre-Clovis times through the historic plains tribes and occasionally overlapping with ethno-history and historic archaeology. Of particular importance are the paloeindian locations from the plains and the archaic "type" sites on the front range near Denver.

Only 2,463 archaeological sites have been recorded in an area comprising almost one-quarter of the state. This reflects the infinitesimal amount of Class III inventory completed and recorded in this century. Of these sites, 2,203 remain unevaluated in terms of significance for the National Register of Historic Places. None of these sites are located on public lands.

Areas of high potential were determined by statistical correlation of known site emplacement with physiographic variables. It must be cautioned that areas that are not designated high potential do not indicate an absence of archaelogical resources, but an absence of adequate knowledge to make a sensible prediction. The portions of the counties indicated within the following management zones have high potential.

Zone 1: Elbert, Eastern Arapahoe
Zone 2: Western Yuma, Kit Carson, Cheyenne, Eastern Adams, Southwestern Washington
Zone 3: All
Zone 4: Northeast Yuma
Zone 5: All
Zone 6: All
Zone 7: All
Zone 8: All
Zone 9: All
Zone 10: The area lying along the front range.

Site types common to the NERA are villages, camps, quarries, manufacturing sites, kill and butchering locations, and vision quests, and burials.

The Resource Area represents one of the "richest" regions for Colorado history (see Table III-4). The area was first settled by Anglo-Europeans and was home to the Pike's Peak Gold Rush of 1859. The bulk of Colorado's history occurs in the northeast quarter of the State, and most of the State's population is located here. Equally, the majority of major historic sites are found in this part of the State. (See Federal Register, Feb. 6, 1979, pages 7437-7440).

A description of the history of Northeastern Colorado is found in: "The New Empire of the Rockies," by Steven F. Mehls. This document is a Class I inventory (History) that conforms to BLM's 8111 Manual and is a synthesis of existing literature about this area. Also included is an extensive Bibliography and a series of management appendices that catalog all existing known historic sites within the area. Cities and towns were excluded from these lists because there are no public lands involved.

There are three major and two minor historic districts within the Northeast Resource Area that involve public lands. Georgetown-Siver Plume, located in Clear Creek County (Zone 8) is listed in the National Register as a National Historic Landmark, and contains public lands and subsurface estate within the boundaries.

The Central City Historic District is located in Gilpin County (Zone 6) and is listed in the National Register as a historic district. There are small parcels of public lands within the boundaries of this district.

The North Fork Historic District is located in Jefferson and Douglas Counties (Zone 9) and is listed in the National Register. The district includes mixed public lands.

The Switzerland Trail Historic District is a railroad in Boulder County (Zone 6), and there are some small parcels of public land located within the boundaries of the district.

Management Zones 5,6,7,8,9 and 10 have the majority of National Register of Historic Places sites located within them. Not only does this represent the most sites in the Northeast Resource Area, but also within the entire State.

The "Moffat Road," or Denver, Northwestern and Pacific Railroad Historic District is located in Boulder and Grand Counties. There are a few isolated parcels of subsurface estate and within the old railroad right-of-way. Generally, the surface is national Forest or private land. Sites of lesser significance are noted in the Class 1 History.

Management Zones 6,8 and 9 are in areas of high potential for historic sites and districts. Two specific areas are noted as potential historic districts: Gold Hill, Colorado, and Ward, Colorado (Zone 6). These zones also have public land where this potential could be realized.

Management Zones 5,7 and 10 should be considered of low potential because there are no National Register (or known eligible National Register) sites located on public lands in these units, and minor amounts of public land are involved.

Management Zones 1 thru 4 contain National Register (and eligible) sites that are generally within town or city limits. The only conflicts occur with sites located on or near subsurface estate. The Beecher Island Battleground (Yuma County) borders a block of subsurface estate (Zone 2).

TABLE III-4

Known Historic Sites and Public Land Potential

Known Sites (all ownership)			Potential			
NRHP*	Local Interest	Unevaluated	H	M	L	County
2	---	Unknown			X	Arapahoe, El Paso
18	---	Unknown			X	Boulder
1	---	Unknown			X	Logan
4	---	Unknown			X	Weld, Yuma
9	---	Unknown			X	Boulder, Weld
9	Gold Hill, Ward, Sunshine Canyon	3	X			Boulder, Gilpin
0	---	Unknown			X	Boulder, Jefferson
12	---	Unknown	X			Clear Creek
12	---	Unknown			X	Jefferson
149	---	Unknown			X	Denver, Larimer, Jefferson, El Paso, Douglas, Arapahoe

* National Register of Historic Places

PALEONTOLOGIC VALUES

Fossils can occur in almost any of the sedimentary rocks in the area. Several formations are noted for an abundance of fossils and a few are famous for yielding paleontologic finds of significance.

Quaternary sediments particularly eolian (wind-deposited) types are usually lacking in fossils. Alluvial sediments have yielded evidence of early man and Ice Age mammals, however, these finds are rare.

Tertiary sediments are the primary source of vertebrate fossils in the area. The Ogallala, Arikaree, and White River formations are particularly important in this respect. Universities and museums have in the past opened quarries in these formations and collected important vertebrate fauna.

Mesozoic sediments have been an important source of abundant invertebrate fossils and occasional vertebrate fossils. The Dawson, Denver, and Laramie formations contain coal, which, in the form of lignite, is made up entirely of often identifiable plant remains. Pollen in these formations provides age dates in many areas. The Fox Hills sandstone contains fossil clams and their burrows. The Pierre shale is highly fossiliferous in places and important invertebrate species, notably ammonites, provide age dates that serve to differentiate this otherwise featureless and very thick formation. The Niobrara formation contains abundant foraminifera providing important age dates. The Dakota formation is noted for dinosaur footprints near Morrison, while the underlying Morrison formation yielded one of the first dinosaur discoveries in the West, touching off a feud between two famous 19th century paleontologists, E.D. Cope and D.C. Marsh.

The remaining Mesozoic and Paleozoic sediments contain some invertebrate fossils important for age dating but none of particular significance. The Ingleside formation is particularly notable for its crinoidal limestone.

The Precambrian rocks of the mountains contain no fossils, being too old and deformed to preserve any evidence of microscopic life.

GEOLOGIC FEATURES AND HAZARDS

The geology of the Northeast Resource Area is dominated by two major structural features: the Front Range Uplift and the Denver Basin. These structures were created as a result of the Laramide Revolution during the Late Cretaceous and Early Tertiary Periods. Erosion of the Front Range after this and another earlier period of mountain building in the Pennsylvanian Period supplied continental sediments to the Denver Basin. Other basin sediments deposited under quieter tectonic conditions are mostly of the marine shelf type. Total relief between these two structural features is a least 21,500 feet. Several other smaller structural features are notable; among them are the Las Animas Arch which lies in the southeastern portion of the Resource Area and separates the Denver Basin from the Hugoton Embayment; and the Greeley Arch, which coal geologists consider to be a division between the Denver Basin to the south and the Cheyenne Basin to the north. The Front Range is composed of igneous and metamorphic rocks of Precambrian age. The metamorphics are believed to be thick sequences of sedimentary and volcanic rocks deposited in a rapidly subsiding basin and then subjected to regional metamorphism. At least three distinct phases of granitic intrusion into this metamorphic mass occurred before the end of the Precambrian Era. The Laramide Revolution, which uplifted the Front Range into its present structural configuration, seems to have reactivated many of the fault zones created during the Precambrian and emplaced a series of smaller scale granitic intrusions and minor volcanic rocks.

The Denver Basin contains sedimentary rocks of almost every period of geologic history from the Cambrian to the Holocene. The Cambrian through Mississippian sequence is characterized by marine sandstones, dolomites, and limestones. Uplift of the ancestral Rocky Mountains during the Pennsylvanian Period contributed a continental conglomerate, sandstone, and shale sequence to the west side of the Denver Basin while the east side continued deposition of marine limestones and shales. From the Permian Period through the Jurassic Period, as the ancestral Rockies eroded away and drier conditions prevailed, a sequence of sandstones, siltstones, limestones and evaporites (i.e., gypsum, anhydrite, and salt) was deposited. More normal marine and transitional conditions returned from the Late Jurassic through the Late Cretaceous resulting in a sequence of sandstone, shale and some limestone. During the Late Cretaceous Period, the Laramide Revolution began to influence depositional activity in the Denver Basin. The uplifting of the Front Range sharply bent the sedimentary rocks at its edge as those on the crest were carried upward. The inland sea drained away as the entire area was uplifted. Debris eroding from the Front Range was deposited as Late Cretaceous and Early Tertiary conglomerates, sandstones, and shales with soft coal beds forming in the rapidly subsiding Denver Basin. Following tectonic quiescence, a series of regional uplifts of the area resulted in the deposition of vast sheets of alluvial material cross the Denver Basin during the late Tertiary. As the erosional regime that now characterizes the Resource Area took over in the Quaternary Period, these sediments and the canyons of the Front Range were carved into the forms that they are today. Alpine glaciers also affected some of the stream valleys in the westernmost portion of the Resource Area by deepening and widening them during their growth and later deposition of the drift material within them as they melted.

A geologic feature is defined as an unusual or outstanding landform created by processes of erosion on various geologic terrains. Examples include badlands, hogbacks, flatirons, mesas, buttes, canyons, cliffs, bluffs and spires.

For the purposes of this planning document, geologic features will be considered to occur in three broad geologic terranes that the Resource Area encompasses: plains, foothills and mountains. The plains are defined as the geologic terrane that is characterized by horizontal or nearly flat lying sedimentary rocks. Badlands, mesas, buttes, shallow canyons and bluffs are geologic features that commonly occur here. The foothills is the area up to 10 miles wide which forms the boundary between the plains and mountains. Here the sedimentary rocks have been tilted up towards the west and involved in some folding and faulting. These beds range in attitude from nearly horizontal to overturned. Some of the classic features of American geology, such as the hogbacks and flatirons, occur here. The mountains are those areas west of the foothills where very hard rocks of Precambrian age form the core of the Rocky Mountains. Features in this terrane include canyons, cliffs and spires.

Features of note in the Resource Area include Fremont Butte, Pawnee Buttes/Chalk Bluffs, Clear Creek, Boulder Creek and Waterton Canyons, and Cathedral Spires.

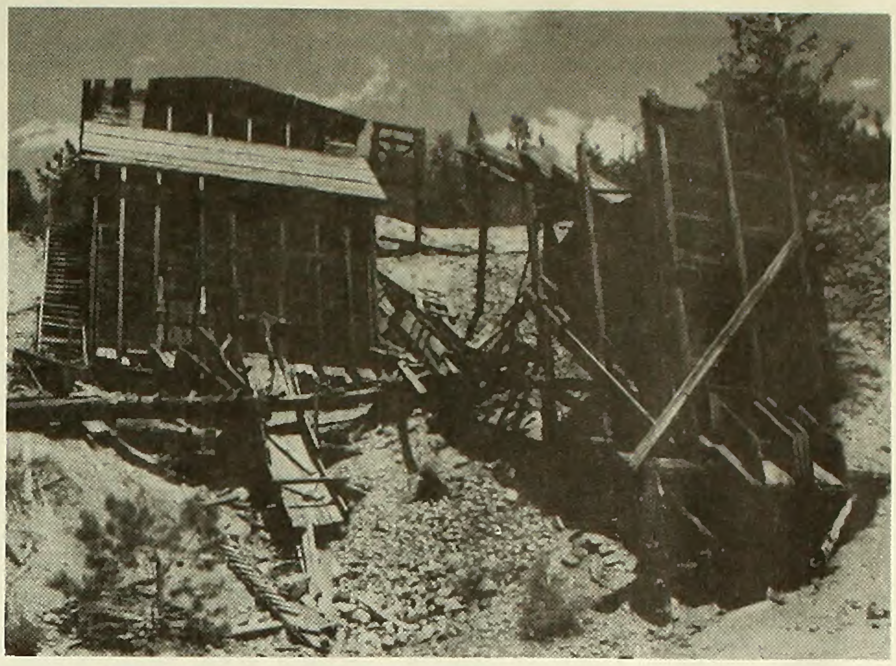
A geologic hazard is defined by Colorado House Bill 1041 as "a geologic phenomenon which is so adverse to past, current, or foreseeable construction or land use as to constitute a significant hazard to public health and safety or to property."

Included as hazards in the definition are avalances, landslides, rockfalls, mudflows, and debris flows, unstable or potentially unstable slopes, seismic effects, radioactivity, ground subsidence, and expansive soil or rock.

Ground subsidence over abandoned underground coal mines is a problem in certain areas. Expansive (bentonite) soil occurs over wide areas and constitutes a major problem where permanent structures are involved. The remainder of the named geologic hazards occurs in various places in the foothills and mountain regions.

LOCATABLE MINERALS

Mineral resources considered subject to location under the General Mining Law of 1872, as amended, include but are not limited to gold, silver, copper, lead, zinc, tungsten, molybdenum, and uranium. The vast majority of these minerals have been produced in an area called the Colorado Mineral Belt, which runs (within the Northeast Resource Area) from Boulder in the northeast to Silver Plume towards the southwest. Mineralization within this belt is a product of Laramide (Tertiary) porphyritic intrusions, the emplacement of which appears to be controlled by deep, northeast-trending, Pre-Cambrian shear zones. Most of the veins in the Northeast Resource Area portion of the belt are of early to middle Tertiary age and were intruded into Precambrian host rocks. These veins are generally small but high-grade, 1 to 3 feet wide, trend northeast and are commonly zoned from quartz-pyrite-gold and/or silver to pyrite-lead-zinc outwards. Location and patenting of mining claims on these base and precious metal veins accounts for the complex land pattern which the BLM manages along the Front Range.



SALABLE MINERALS

Minerals considered to be salable under the Material Sale Act of 1947 occur widely throughout the Northeast Resource Area. Included in this category are such minerals as sand, gravel, clay, stone and other "common varieties."

Sand and gravel occur in various geologic units. Floodplains and terraces of most streams in the Resource Area contain usable deposits. Unconsolidated sandstone and conglomerate units of Tertiary Age are widespread and may contain useful deposits. Large areas of stabilized dune sand exist on the eastern plains which is suitable for certain uses. Quarry aggregate (stone suitable for crushing to gravel size) is found throughout the mountain and foothills area and much high quality material occurs near the major consuming centers of population. Some of this rock is also suitable for dimension stone.

Clay occurs in several types and is also widely distributed. Bentonite, fullers earth, common clay and shale, pottery clays and refractary clay are among those known in the Northeast Resource Area.

Stratiform deposits of uranium occur in areas in and around the Pawnee National Grasslands and other areas on the plains. Nonmetallic locatable minerals are not widespread, and occur mostly within the Foothills region of the Northeast Resource Area.

LEASEABLE MINERALS (Coal, Oil, and Gas)

Mineral resources of importance within the Resource Area considered leasable under the Mineral Leasing Act of 1920, as amended, are oil and gas, and coal.

Oil and gas has been by far the most important economic mineral in the Northeast Resource Area. Most production has been from sandstones of the Dakota Group of Early Cretaceous Age. The Dakota was deposited in a transitional environment during transgressive episodes which resulted in deltaic sedimentation from the northeast. The Dakota, primarily the "D" and "J" sands of this group, is generally productive where the sedimentation took place in a marine environment. Little or no production has been discovered where the environment of deposition was predominantly continental. Commercial quantities of oil and gas have been discovered in other sedimentary rocks of the Denver Basin. Sandstone members in the Upper Cretaceous Pierre Shale have produced hydrocarbons in the Boulder-Larimer-Weld Counties Area. The Upper Cretaceous Niobrara formation consisting of limestone and marl has yielded natural gas production in the eastern portion of the Resource Area, primarily in Yuma County where the proper structures and fracturing exist. The Codell sandstone, also of Upper Cretaceous Age, has recently been discovered to be a possible commercial hydrocarbon reservoir. Also productive is the Lyons sandstone of Permian Age. Known oil and gas occurrences in this formation are currently limited to Larimer and Weld Counties. Limestones of Pennsylvanian and Mississippian Age are productive along the Las Animas Arch in Kit Carson and Cheyenne Counties, and further Paleozoic production is being discovered in the remainder of the Denver Basin as more drill holes have penetrated these deeper formations.

The Las Animas Arch is the major structure within the Denver Basin that has proven productive. Other large anticlines exist along or near the foothills, primarily in Boulder and Larimer Counties. Other localized structures occur throughout the basin but not all of these contain oil and gas. Most of the oil and gas in the Denver Basin occurs in stratigraphic, rather than structural, traps. In a few fields fracturing and faulting provide both reservoirs and structures for oil and gas accumulation.

Coal occurs in the Denver Basin in two formations, the Upper Cretaceous Laramie Formation and the Paleocene Denver Formation. Laramie Formation coal is generally subbituminous to lignite in rank, and commercial deposits exist in El Paso, Elbert, Boulder and Weld Counties, with the latter two accounting for 94% of the past coal production in the Resource Area. Adams, Arapahoe, Douglas, Jefferson, and Larimer Counties have also produced Laramie coal. Only one coal mine is currently being operated in the Denver Basin, the Keenesburg strip on private land in Weld County. Denver Formation coal is lignite in rank and generally of lower quality than Laramie coal. Commercial deposits exist in Adams, Arapahoe, and Elbert Counties. Very little of this coal has been mined to date. All commercially valuable deposits currently identified are minable by surface methods.

AIR QUALITY

The Northeast Resource Area is comprised of parts or all of Air Quality Control Regions 1 through 5 of the State of Colorado. An area that consistently fails to meet the National Ambient Air Quality Standards due to controllable sources is designated as a nonattainment area. The towns of Greeley and Fort Collins in Region 2 are nonattainment areas for carbon monoxide and total suspended particulates. The counties of Boulder, western Adams and Arapahoe, Denver, Jefferson, and Douglas in Region 3 are nonattainment areas for ozone and carbon monoxide. The Denver urban area is also a nonattainment area for total suspended particulates. The city of Colorado Springs is a nonattainment area for total suspended particulates. With the exception of the cities of Grand Junction and Pueblo, all of Colorado's nonattainment areas are within the Northeast Resource Area. Rocky Mountain National Park is the only designated Class I area in the Northeast Resource Area. Several wilderness areas, also located on the west edge of the area, are sensitive to air quality degredation. Allowable degradation of air quality in Class I areas is much less than in Class II which the remainder of the Resource Area is designated. Seventeen management units are located in nonattainment areas for ozone and carbon monoxide: 513,514,601 through 606,701,702,803,806,906, and 908 through 911. Management Unit 1003 is in a nonattainment area for carbon monoxide and total suspended particulates.

The air movement in mountainous areas and foothills to the east of the Continental Divide are typified by mountain-valley wind flows. Because of particular dispersion and transport characteristics, the narrow strip along the foothills of the Rockies is of special interest.

The northern portion of the Front Range Basin is characterized by high mountains in the west (including the eastern portion of Rocky Mountain National Park), steep foothill canyons (e.g., Thompson, Boulder, and Cache la Poudre), and relatively flat terrain east of the foothills. Because drainage flow is generally toward the east and is reinforced by the large-scale wind flows, the mountain-valley drainage and downslope winds may be especially strong in some of these foothill valleys. In valleys and canyons where cold air-drainage is likely but the flow is somewhat restricted by topographical constrictions, dispersion may be poor. Because so few mountain meteorological observation sites exist, it is difficult to describe adequately the individual valley and mountain air movements.

The potential for air stagnation and very poor dispersion is high along the foothills between Fort Collins and Denver. Inversions are frequent along the front range as a result of radiational cooling, cold air "capping", and subsidence in the lee of the mountains. Dense population and industrial emission sources in this area make it subject to high ambient pollutant concentrations. During periods of strong sunshine (insolation) Denver often has high ozone concentrations. In addition to the potential for poor dispersion, the valley drainage flow of air generally ventilates the front range during part of the day, but may actually recirculate some of the same pollutants back into the area when the winds shift. Dispersion and transport improve significantly during significant large-scale weather movements and chinook wind conditions.

Colorado Springs is characterized by a general north and south wind pattern and may be subject to poor dispersion conditions similar to those in Denver. Colorado Springs winds are influenced heavily by the mountains due west of the city, including Pike's Peak, which channels winds around the city.

Air basins on the plains are much harder to classify in terms of actual air drainage because the land is relatively flat and devoid of significant topographical features. Nevertheless, similarities in dispersion potential do define the south Platte Basin in the northeast part of Colorado (from the plains just east of the front range to the Kansas border). Wind flow is dominated by the prevailing winds (little topographic influence) and large-scale weather disturbances (such as strong summer convective activity). In the presence of a stagnating high-pressure system, surface inversions may form at night and break up quickly the following morning. Overall dispersion and transport are very good for the area.

Major industrial sources of pollutants include power plants, chemical refineries, construction materials manufacturers, breweries and container manufacturers. More numerous (but disperse) industrial sources include general heating/cooling, materials storage and transportation. Residential sources are also significant; primarily home heating/cooling and transportation. There are major natural sources of total suspended particulates (typically wind blown dust) but most gaseous pollutants are man caused.

ROADS AND TRAILS

There are no BLM roads maintained on a regularly scheduled basis in the area. County roads are the most common although state and federal highways do cross BLM administered lands. There are also many private roads and trails, some crossing public land are within rights of way while others are not.

PESTS

Pest control is a facet of the forestry program. Pests have had major impacts on the forest resources in the Resource Area. These include the mountain pine beetle predominately in Management Zones 6 and 7; the western spruce budworm in Management Zones 6,7 and 8; and dwarf mistletoe which is in Zones 5-9.

USE AUTHORIZATION

There are many types of use authorizations. They are presently reviewed when application is received for possible permiting.

PUBLIC INFORMATION

Public information is provided as needed whenever identified. Brochures, maps, signs, and personal contacts are used as appropriate.

UNAUTHORIZED USE

There is a large amount of identified unauthorized use (occupancy, roads, mineral, timber, etc) and probably many unidentified uses. Cases are processed as funding is received and the uses rectified.

ECONOMICS

This section is divided into two parts. First, an overview of the resource areas population, income and employment is presented. The results are portrayed on a county basis because data could not be collected by management zones. Second, the contribution of BLM administered lands and resources to the various management actions economy is presented. There is little economic dependence on BLM administered lands, but differing managing techniques will impact some proportion of the population.

Population, Income, and Employment

Table III-5 portrays the varying population growth within the resource area. The front range population has grown rapidly in terms of both absolute numbers and percentage change. Similarly, continued growth at a fast pace has been projected by the Colorado State Demography Section. In contrast, the eastern portion of the state shows little growth and in some counties an absolute decline. The dividing line between these areas has been progressively moving east. Suburbs have moved into what was farmland in many areas near the urban front range. "Bedroom communities", which serve as residences but not workplaces have spread east of Denver and southeast to Castle Rock and Elizabeth.

Table III-5
Population Estimates by County*

County	1970	1980	1985	1990	2000
Adams	185789	245944	278900	321500	406500
Arapahoe	162142	293621	346400	394700	497700
Boulder	131889	189625	221600	253300	316600
Cheyenne	2396	2153	2300	2300	2400
Clear Creek	4819	7308	7200	7200	7800
Denver	514678	491396	500100	516300	549000
Douglas	8407	25153	48800	74000	124100
Elbert	3903	6850	7800	8500	9900
El Paso	235972	309424	338700	378300	457600
Gilpin	1272	2441	2700	2800	3000
Jefferson	235368	371741	433500	487300	612700
Kit Carson	7530	7599	8300	8900	10400
Larimer	89900	149184	181800	214700	280200
Lincoln	4836	4663	5300	5200	5200
Logan	18852	19800	20300	20600	22000
Morgan	20105	22513	22800	23300	26800
Phillips	4131	4542	5200	5600	5700
Sedgwick	3405	3266	3200	3100	2100
Washington	5550	5304	5500	5500	5600
Weld	89297	123438	151000	174300	220700
Yuma	8544	9682	10400	11200	12600

* Colorado State Department of Local Affairs, Demography Section.

The majority of population growth within the NERA front range can be attributed to immigration. Population of the front range constitutes 72 % of that in the state (front range is considered the counties of: Larimer, Boulder, Denver, Adams, Arapahoe, Jefferson, Clear Creek, Gilpin, Douglas, El Paso). This is an increase from 71 % in 1970. In contrast the eastern plains in the NERA constitutes 7 % of that in the state, which is the same as it was in 1970 (actually if Weld County is excluded the percentage of the state decreases over time).

Employment and income data for the respective counties is found on Table III-6. The following general areas are evident. First, that the counties to the east of the front range are primarily agricultural and ranching. In addition, many of the communities serve as stops along major highways. Therefore, lodging and service expenditures are higher than what would be expected for many rural areas. Second, the sales and employment data for Clear Creek and Gilpin counties indicate that much of their economies are tourist based. The mountainous terrain, places of historical significance, and proximity to larger urban areas account for a significant quantity of tourists each year. Third, western El Paso county has rapidly expanded employment. This area has four military installations which provided a large employment boost. Additionally the expansion of an industrial base (primarily high technology) and tourism to the areas attractions has led to rapid growth. Fourth, Larimer, Weld, and Boulder counties have college influences in the larger cities, whose influence has induced expansion and growth of several industries. The former two counties combine this with a large agricultural base. Fifth, the Denver area and its suburbs which includes Jefferson, Adams, Arapahoe, Douglas, and Denver counties has as expected a large retail base. In addition, it is characterized by the growth of industry, the regional headquarters of many companies, and a large quantity of tourists.

TABLE III-6

Planning Region Wages by Sector ($1000)*

Sector	1	2	3	4
Federal Government	1474	8976	196848	499
State Government	9669	62799	418264	3294
Ag., Forestry & Fish	1776	3158	12074	287
Mining	2631	2193	115506	44
Construction	2874	22446	221968	233
Manufacturing	6161	82653	610297	701
Trans & Utilities	4581	13017	277789	758
Wholesale Trade	5595	10946	279234	1379
Retail Trade	7357	31603	338096	1443
Fin Ins & Re	2484	12873	224718	453
Services	6089	25502	596222	1125
Region Total	50664	276166	3291016	10216
Planning Region Employment by Sector *				
Federal Government	352	1849	39875	143
State Government	3976	20126	119667	1529
Ag., Forestry & Fish	555	1299	5012	118
Mining	583	484	15487	9
Construction	895	6417	50978	101
Manufacturing	1807	20085	139238	223
Trans and Utilities	1227	3325	54494	218
Wholesale Trade	1807	3135	58596	529
Retail Trade	4140	16804	154837	903
Fin Ins & Re	858	3968	58686	155
Services	3292	11090	176952	626
Region Total	19042	88582	873822	4554

Source: Colorado State Department of Labor and Employment

* Data for jobs covered by unemployment insurance, 1st Quarter 1980. Planning Regions are defined as follows. 1) Logan, Morgan, Phillips, Sedgwick, Washington, Yuma. 2) Larimer, Weld. 3) Adams, Arapahoe, Boulder, Cler Creek, Denver, Douglas, El Paso, Gilpin, Jefferson, 4) Cheyenne, Elbert, Kit Carson, Lincoln.

Per capita income differs significantly throughout the region as indicated on Table III-7. The metropolitian region shows a higher per capita than the surrounding rural area. This is to some extent related to sectoral employment differences, but care should be taken in interpreting the results since the cost of living is lower for housing and some other goods in many rural communities.

Table III-7

Per Capita Income

AREA	1969	1977
US	3119	5751
Colorado	3106	6118
Adams	2877	5701
Arapahoe	3814	7336
Boulder	3384	6501
Cheyenne	2305	4085
Clear Creek	3226	6589
Denver	3534	7093
Douglas	3276	6947
Elbert	2333	4480
El Paso	2920	5240
Gilpin	2830	5287
Jefferson	3675	7235
Kit Carson	2692	4650
Larimer	2865	5574
Lincoln	2385	4320
Logan	2528	5124
Morgan	2377	4644
Phillips	2706	5868
Sedgwick	3028	5696
Washington	2427	4459
Weld	2616	5081
Yuma	2393	4477

Source: US Department of Commerce, Population Estimates and Projections 1977.

Unemployment data indicates that the rural communities have had a consistantly lower rate, resulting primarily from outmigration and a consistant agricultural base. However, recent data indicates that this pattern may be changing. While unemployment rates in the rural areas usually are less than those in the metropolitain areas, (all are considerably higher than past history as a result of the recession) the gap is shrinking. Part of the explanation lies in the primary focus being agricultural. The severity of the recession on agricultural goods, supporting products and agricultural communities has caused a rapid rise in unemployment.

Table III-8

Unemployment Rate's

Area	1970	1975	1980	1983 (April)
Colorado State	3.5 (31108)	5.2 (60987)	3.5 (50729)	8.6 (139294)
Co Spgs SMSA	3.7 (2752)	6.9 (7065)	4.1 (5420)	8.1 (11855)
El Paso				8.1 (11474)
Denver-Boulder LMA	3.2 (16867)	5.2 (35433)	3.2 (27562)	7.1 (68887)
Adams				9.1 (13581)
Arapahoe				6.0 (10364)
Boulder				6.8 (7651)
Clear Creek				14.5 (684)
Denver				7.1 (20802)
Douglas				5.4 (789)
Gilpin				9.2 (137)
Jefferson				6.8 (14879)
Elbert	2.3 (43)	5.6 (119)	3.2 (72)	11.1 (269)
Kit Carson	2.0 (67)	2.0 (78)	1.8 (66)	4.4 (166)
Larimer	3.1 (1169)	4.1 (2319)	3.2 (2541)	7.8 (6409)
Lincoln	2.5 (54)	3.2 (74)	3.2 (78)	7.4 (188)
Logan	3.4 (276)	2.9 (250)	2.5 (241)	7.3 (748)
Morgan	2.8 (244)	5.4 (534)	3.6 (451)	10.6 (1267)
Phillips	2.1 (40)	1.9 (37)	1.8 (34)	3.3 (61)
Sedgwick	3.7 (65)	5.0 (82)	2.2 (27)	6.5 (93)
Washington	3.0 (76)	2.2 (54)	1.3 (31)	7.5 (179)
Weld	3.1 (1173)	4.0 (2159)	3.9 (2386)	8.0 (4957)
Yuma	1.8 (71)	1.3 (58)	1.4 (60)	5.2 (229)

Parenthesis are total unemployed.
SOURCE: Colorado State Division of Employment, Research and Analysis.

Local Revenues and Infrastructure

BLM management has not significantly influenced local revenue and infrastructure in the resource area. The most important aspect is the distribution of oil and gas royalties and Payments in Lieu of Taxes (PILT) payments. However, local and district revenues (and to a lesser extent county revenues) are obtained primarily from local sources (eg. property tax).

Local infrastructure and revenue conditions will be depicted for any proposed large project at that time. This approach is taken for the following reasons: 1) The resource area and the potential mining sites are too large to analyze cost effectively, and 2) Industry has indicated little interest in large scale mining within ten years (except for Preference Right Lease Applications which were examined in a separate environmental document.

Resource Contributions

Fuelwood: Increased use of fuelwood along the front range is expected. Fuelwood consumption should grow for the following reasons: Rapid population increase; the abundance of fireplaces in new dwellings; the rising cost of energy; and the popularity of gathering fuelwood. Prices of fuelwood are expected to rise as areas close to the cities get picked over. Estimates are that 70% of all fuelwood cut in Colorado is utilized in the Denver metropolitan area.

The value to local communities can be estimated by the price of substitute energy or by the sale price of the cords times the regional multiplier. The former method estimates an annual value of $5800 assuming wood is used in fireplaces. To the extent that heating is achieved by wood stoves this figure is understated. The latter method derives an annual value of $12800. However, since most wood purchases are for personal use multiplier effects are overstated by this method. It is evident that the BLM firewood program does not significantly affect the local economics.

Values to consumers (national values) reflected by the value of the wood minus the costs of obtaining it are estimated at $20 to $32 per cord. The total value from public land using past harvest rates and projecting them forward would be from $54,237 to $86,780 discounted at 7 3/8% in perpetuity.

Wildlife: Local expenditures by direct wildlife users (hunters, fishermen and trappers) comprise an important portion of income to many Coloradoans. Direct spending in Colorado was over $1,000,000,000 (1 billion dollars) in 1980 for variable and fixed expenses to hunt. Additionally, non-consumptive values and expenditures for wildlife probably exceed those of the direct users. Many tourists and Coloradoans take trips with the expressed purpose of viewing wildlife. Further evidence of the nonconsumptive value of wildlife in twofold. First, the Colorado state income tax form provides for donations for non-game wildlife programs. A total of $692,000 was contributed by 123,394 people in 1982. Second, a study of the value of increased bighorn sheep herds in Wyoming indicates that the total non-consumptive value will be greater than the consumptive value to the direct user.

Table III-9

Estimated Variable Expenditures by those hunting in Northeast Colorado

REGION

	1	2	3	5
Antelope	$18063-23581	$41561-54257	$6008-7844	$61883-80785
Deer	$212059-228087	$1993557 2144228	$625425 672694	$121014 130182
Elk	0	$822744-944111	$217885-253297	0

Region 1= Logan, Morgan, Phillips, Sedgwick, Washington and Yuma Counties.

2= Larimer and Weld Counties.

3= Adams, Arapahoe, Boulder, Clear Creek, Denver, Douglas, Gilpin and Jefferson Counties.

5= Cheyenne, Elbert, Kit Carson, and Lincoln Counties.

Data limitations prevent the derivation of expenditures for wildlife in the Northeast Resource Area for non-consumptive wildlife uses. Therefore, the following analysis is only applicable to hunter expenditures. A DOW study conducted in 1981 estimates total hunter expenditures by region. Regression analysis was used to estimate what portion of these expenditures could be attributed to people hunting in that region as opposed to those leaving from or passing through the region. Table III-9 depicts the results for 1980 using state average expenditures per hunter in the area hunted.

In addition, fishing and small game hunting add significant amounts to local economics. The proportions cannot be determined for these activities due to lack of complete data. In the resource area these expenditures, especially for fishing are expected to exceed those for Big game. All these expenditures cannot be attributed to wildlife from public lands which constitute a small portion of the total.

The value of wildlife to the hunter is a different issue than that of local expenditures. The value is that received by the hunter or viewer over and above his expenditures. This concept (consumer surplus) represents the national benefit (net gains) from wildlife.

In a large region, wildlife determines whether a hunter has the opportunity to hunt at all, whereas for incremental herd changes (eg. the addition of five deer) it determines the quality of the hunt. The average value (regional) and marginal value (one added animal) by specie are:

Individual Animal Values *

	Average	Marginal
Antelope	$17	NA[1]
Deer	$105	$42
Elk	$238	$121

[1] Marginal value could not be estimated accurately since success rates are high due to permit limitations.

* Estimated from data obtained from a study by John McKean for DOW.

Range: Currently, the BLM contributes very little to the ranching and farming industry. Table III-10 and III-11 depict the importance of ranching in the respective management zones and the significance of BLM allotments to ranching.

The minimal contribution of BLM in terms of local business sales, region income and man-days of labor is depicted on Table III-11. In addition, the annual national value (defined as the price minus costs of production) of an AUM is estimated using average lease rates as the minimum value and estimates from a ranch budget study (McKean, et. al.) as the maximum value. The actual value is expected to be closer to the maximum since an operator benefits by more than a lease rate or he wouldn't be expected to lease.

TABLE III-10
Trends in Cattle Ranching in the NERA

Management Unit	Employment (% of total) from ranching and farming	Total cattle changes since 1975 (%)	% BLM Cattle	Comments on ranch industry trends Since 1975
1	1% (Arapahoe) to 26% (Elbert)	-20	0	Employment and income has been declining in absolute and relative * terms.
2	14% (Morgan) to 34% (Sedgwick)	-6	<1	Employment and income has been declining in absolute and relative * terms.
3	5% (Larimer) to 34% (Sedgwick)	-9	<1	Income has been declining in absolute and relative terms. Employement has been declining in relative terms.
4	1% (Boulder) to 26% (Elbert)	-4	<1	Employment and income has been declining in absolute and relative terms.
5	1% (Boulder) to 5% (Larimer)	-20	<1	Employment and income has been declining in absolute and relative terms.
6	<1%	-61	<1	Employment has been declining in absolute and relative terms. Income has increased in absolute terms but declined in relative.
7	<1%	NA	0	
8	<1%	NA	<10	
9	<1%	-13	<1	Employment has been declining in absolute and relative terms. Income has increased absolutely but declined relatively.
10	<1%	-11	<1	Employment decreases, but income is increasing in absolute terms.

* relative means percentage of total income or employment
NA = not availible

TABLE III-11
Contribution of BLM Grazing Program to the Local Economy

Mgmt Unit	Business Sales	Regional Income Per Ranch Payment To Labor	Regional Man Days	National Value (Lease Rate)	National Value (Ranch Budget)
1	0	0	0	0	0
2	$26,581.80	$9,084.60	260.4	$3,845.68	$8,675.04
3	$ 1,835.41	$ 627.27	17.98	$ 263.03	$ 590.15
4	$ 4,556.88	$1,557.36	14.64	$ 653.04	$1,489.68
5	$ 118.35	$4,044.81	115.94	$1,696.09	$3,837.24
6	0	0	0	0	0
7	0	0	0	0	0
8	$13,290.90	$4,454.10	130.20	$2,086.10	$4,273.50
9	$ 2,531.60	$ 865.20	24.8	$3,628.00	$ 814.00
10	$ 63.29	$ 21.63	.62	$ 9.07	$ 20.36

The 40,030 public land acres and 615,000 subsurface estate acres are scattered across the whole Resource Area. Individual tracts of continuous ownership range in size from tenths of an acre to the largest of 3076 acres. It requires a substantial amount of time and money to properly manage and inspect the hundreds of tracts located up to 170 air miles from Denver and the BLM office although the majority of the public land is within 50 miles. The past annual expenditures for management of the Northeast Resource Area range from $225,000 to $300,000. This includes office space, travel costs, general procurement, project maintenance, and personel costs associated with managing all of the above acres.

SOCIOLOGY

A qualitative study conducted in the RMP study area during the summer of 1982 is the basis for this section. The major drawback to this study is its limited sample size relative to the total population of the region. However, a sample was drawn from interest groups who tend to be consistent users of public lands. Therefore, although the study is not a random or representative sample of the entire population within the study area, it does reflect the concerns and opinions of the types of people who most often use public lands.

The present social environments of the region cannot be understood without consideration of its history, geography, topography, and location within the study area. There are three different areas for which data was collected.

The Eastern Plain Area consists of the ten eastern most counties plus portions of Weld, Adams and Arapahoe Counties. Farming and oil and gas development are its main economic bases. This area is mostly rural in nature with each county having only a few incorporated towns. In the eastern portions of Adams and Arapahoe Counties, several subdivisions have been established which provide housing for Denver metropolitan area employees.

The Metropolitan Area is made up of the Denver, Fort Collins and Colorado Springs urban areas. Each of these metropolises is economically diversified. The Fort Collins area has a large university population which heavily influences the character of the city whereas Colorado Springs' economy and social stratification is significantly affected and determined by the substantial military populace present. Both Fort Collins and Colorado Springs also serve as trade centers for a large rural, agricultural population. The Denver area is so large, it is not predominantly characterized by any one group. Major economic bases include light and heavy industry, energy development, government and academia.

The Front Range Area consists of the two western most counties, Clear Creek and Gilpin, as well as the western portions of Larimer, Boulder and Jefferson Counties. Tourism, mining and ranching are its main economic bases.

Present Social Attitudes, Perception, and Concerns

The following discussion is an aggregation of data gleaned from the 1982 qualitative study. Only information which is pertinent to the issues and specific management alternatives being analyzed in the Northeast RMP is presented.

Lands

Land disposal was of primary interest to respondents. A majority of people opposed extensive sales of public land. Forty-one percent of the respondents were opposed to all sales and an additional thirty-one percent were opposed to sales except in very limited quantities and under careful scrutiny.

Those who favored selling public lands cited economic benefits to individuals and/or the public, such as increased tax revenue on land developed for housing or industrial use. These individuals also believed that greater consolidation of public resources would result in easier, less costly management for the government.

Those individuals opposed to land disposal voiced the belief that it is "our responsibility to keep the land for future generations" as a "public trust". They also thought that good management by the Federal government should be supported in order to effect realistic policies that will preserve wilderness and wildlife habitat. The preservation of open space was also viewed as an area of significant importance as a means of halting the unchecked spread of urban areas.

Concerning the transfer of public lands to state administration, a small minority of respondents (15%) favored extensive transfer. However, the majority (57%) felt that some transfer could lead to an improvement in the management of certain land parcels. This group also indicated that extreme discretion should be used prior to all such transactions. A third group (28%) was strongly opposed to any such transfer of land.

Wildlife

Protection of wildlife habitat received universal verbal support, however, differences in interests surfaced when respondents were asked to compare wildlife and other land use activities. Thirty-nine percent of those responding remained strong in their belief that wildlife was a first priority above all other uses. However, almost as many respondents (33%) indicated that wildlife protection was very important but that other resource uses should take precedence. Furthermore, twenty-nine percent thought that human interests were the only important concern and that wildlife protection was merely one of many sub-issues to human needs.

Housing development was viewed as having a serious negative effect upon wildlife. In fact, this factor was perceived to be a more serious and long-term problem than other activities such as mining, recreation, and timber cutting. Nonetheless, many of those who commented (62%) argued that mineral development was devastating for wildlife, even considering reclamation efforts. Hunting and trapping was also mentioned a number of times as a potential problem for maintenance of wildlife populations.

Finally, there was a sentiment expressed concerning destruction of natural predators and the resulting imbalance in wildlife populations. Criticism was voiced at the prevailing management techniques.

Timber and Firewood

There was virtual unanimity among respondents as to the desirability of some timber harvesting on public lands, whether it was viewed as an economic activity or as a means of managing the forest environment. Beetle and disease control and thinning of forests were mentioned by nearly half of the respondents as positive and necessary procedures that could be accomplished by selective harvesting. However, respondents expressed a concern that close monitoring and control of timber cutting on public lands was needed. Opinion was divided on the subject of clearcutting, with half of the respondents in favor and half opposed to the use of this procedure.

For the issue of firewood cutting, two primary concerns were raised. A clear majority of those responding (53%) favored giving individuals/families priority consideration when issuing permits to cut wood. However, most respondents opposed giving preference to individuals simply because they lived closest to the woodcutting area.

In general, a fairly high degree of satisfaction was expressed with the way forests are being managed. Specific problems mentioned included the practice of clearcutting in some areas, an insufficient supply of wood available for cutting, a lack of supervision and enforcement of regulations in woodcutting areas, and problems with vehicular access to woodcutting areas.

Livestock Grazing

Respondents who were familiar with BLM's range management program thought that grazing was a useful and productive activity that is consistent with the protection of wildlife habitat and conservation of other resources. In addition, they were supportive of policies that would encourage multiple use with minimum impact to grazing lands.

Recreation

Utilization of public lands for recreational purposes included a whole variety of activities. Uses mentioned most often were: fishing (46%), hiking (35%), camping (26%), sightseeing/picnicking (24%), skiing (24%) hunting (23%), and backpacking (19%). Thirty-seven percent of the respondents who addressed the issue reported that they preferred to have some land developed such that it would be accessible to people of all ages and "athletic ability". However, all desired that the major proportion of public land remain in a natural state. In fact, prevailing sentiment was to maintain land in it's natural state with minimal development allowed (49%). Significantly fewer respondents (14%) favored increasing development of more recreational sites.

Among the respondents who discussed roads, twenty-four percent favored closing some existing roads to vehicular access in order to limit the negative impacts. Most respondents supported continuation of the status quo; however, nearly as many thought it would be an improvement to reopen or extend roads on public lands.

ORV use is a controversial issue in the study area. Twenty-eight percent of those responding thought that off-road vehicular use was unacceptable given the negative impacts on other resource activities (i.e., wildlife, forestry, hunting). Furthermore, thirty-seven percent stated that ORV use created a serious impact and should be closely monitored. However, twenty-four percent of the respondents believed the activity had little or no negative impact and eleven percent considered the existing restrictions to be too severe. Attitudes toward motorcycle use were similar to the above. Fewer people (27%) voiced a concern about snowmobile use than the other motorized recreation uses and no particular consensus was evident.

For the most part, hiking and primitive camping activities were perceived in a positive manner by most respondents. However, there was concern expressed that precautions be taken to alleviate the negative effects of intense use of certain areas. Also, concern was expressed about problems that occur in areas surrounding public access routes or developed campgrounds (i.e., littering, crowding, noise, trespass).

Hunting safety was mentioned frequently as an area of serious concern. Many respondents stated that their use of the public land was severely obstructed by the perceived danger from "irresponsible" hunters. Suggestions for improved management included tighter supervision, changes in the hunting techniques allowed, stricter controls on vehicular access, and total prohibition of hunting in specific areas. Of those expressing an opinion, fifty-five percent thought the problem was very serious or unacceptable.

Trespass was cited as a major problem created by recreation users of public lands. Hunters were viewed as the major offenders, with forty-four percent of all respondents expressing concern about this problem. On the other hand, access to public land for hunting was also an issue of importance to many people (38%).

The topic of "open space" was mentioned numerous times. Generally the practice was viewed as important given it established a buffer against the effects of urban sprawl. Only seven people actually opposed the concept of open space, primarily for economic reasons, whereas all other respondents who addressed this issue (53) supported open space designation of some land.

Minerals

A majority of those interviewed expressed ambivalent feelings regarding mineral development. A few (4%) thought current mining regulations were too restrictive and seriously interfered with exploration and development. On the other hand, fifteen percent opposed any mining activities on BLM administered land. For the vast majority of respondents, however, the issue was not so clear cut. Seventy-nine percent of the respondents identified both positive and negative consequences of mineral development.

For the most part, respondents viewed reclamation as an effective means of mitigating the negative impacts of mining. Some did, however, voice concern that the regulations were not being strictly enforced. Even those who were confident about reclamation's potential, expressed concern about the actual effects of mining activities on air and water quality, scenic values, and wildlife habitat. Several people stated they seriously questioned the safety of the drinking water in the Clear Creek and Gold Hill/Ward area.

Generally, oil and gas development was perceived as having less serious impacts than coal, oil shale, and locatable minerals. However, gravel mining was mentioned by several people as an issue around which considerable community conflict revolves. In addition, most people were opposed to private individuals or corporations using public resources to make a profit. Mining operators, on the other hand, thought private enterprise was an appropriate means of developing natural resources. The incompatibility of mining with other resource uses, such as recreation or forestry, was also commonly mentioned by those opposed to mineral development on public lands.

Public Information

During the course of the discussions, numerous people made suggestions which they believed would improve the management of public lands. First, respondents relayed a need for better identification of the public lands.

Through the use of signs and the distribution of pamphlets and maps, the public's knowledge of the location and boundaries would be enhanced. Thereby, problems, such as trespassing on private property, could be reduced.

The second suggestion encompassed public education programs of one kind or another which would encourage responsible use and protection of public lands. Respondents thought that increased public awareness of safety measures and appropriate "use" techniques (e.g., of guns, off-road vehicles) would result in an environment suitable and safe for the many varied users of public lands.

Lastly, more than half of the respondents stated that an increase in staff was needed to ensure safe and balanced use of the lands. They believed that increased supervision of users (e.g., woodcutters, motorized and non-motorized recreationists) could eliminate many problems (e.g., littering, trespassing, unauthorized use) and reduce conflicts between users.

CHAPTER IV
ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter analyzes the environmental, economic, and social consequences of implementing the alternatives presented in Chapter 2. Impacts are assessed in a general manner, because specific on-the-ground projects are not identified. Impacts under each resource are compared by alternative to emphasize the differences between alternatives. A comparative summary of these differences is presented in Chapter 2 and a cumulative assessment is found at the end of this chapter.

The tables in this chapter show the impacts upon each resource by alternative. The categories used in the tables are defined in Chapter II. Analysis procedures are found in Appendix A. All tables are in acres unless otherwise indicated. These acres may not be consistant across alternatives due to rounding off to the nearest 10 acres.

Assumptions generally made:

1. The United States Forest Service (USFS) manages most resources the same as the BLM.
2. The Colorado Division of Wildlife (DOW) manages to emphasize wildlife habitat.
3. The Colorado Parks and Recreation manages primarily for recreational use.
4. Local governments would utilize acquired lands for open space and recreation.
5. Private disposal to the Irrigation companies would mean the continuance of the present reservoir uses.
6. General disposal would result in sale to a private individual. The end or post-disposal use by these persons was projected by the interdisciplinary team. Some were anticipated to remain the same (rangeland, recreation, etc.) while others were expected to be developed into residential subdivisions.
7. Transfer or disposal would occur within 5 years and to the agency or individual identified. It should be acknowledged that provisions for other transfer or disposal is provided for under the land status issue (see Chapter II, 1. Land Status management categories and management philosophy of plan alternative E.). These provisions if resorted to could result in different (and possibly more adverse) impacts than herein documented. But, for the purposes of analysis a specific change in land status had to be assumed at this time.

VEGETATION

Impacts to vegetation would be primarily 1) changes in successional stage as a result of the forestry and grazing programs, or 2) removal of vegetation for varying lengths of time due to minerals activity and corresponding potential change in the vegetative community as a result of reclamation or road building.

There should be no major differences in the amount of vegetation disturbed by mineral development under the five alternatives.

Oil and gas development would eliminate vegetation from the pad site (3 acres maximum) for the life of the development phase. The production phase should allow reclamation of most of the site, leaving less that 1 acre disturbed. Access roads would eliminate vegetation for at least the life of the producing well. They should not disturb more than an average of 1 acre per well.

Coal surface mining would eliminate vegetation on approximately 125 acres/year for each mine having two draglines. Initially, vegetation will be completely eliminated and could begin to be reestablished in 3 to 5 years depending on the progress of the mine. Revegetation would occur unless some "higher and better use" were to preclude reestablishment of vegetation. It would take from one to 60+ years to reestablish the existing communities which vary from cropland to riparian vegetation dominated by mature cottonwood trees.

Salable mineral activity would totally remove vegetation for the life of the project. Some areas would probably never revegetate (high walls of rock quarry), while others may be reclaimed after the project is completed (some sand and gravel operations).

Mining of locatable minerals will eliminate vegetation at the site of the mine and at the tailings pile. Revegetation is very slow on these sites. Normally, little acreage is involved except for a millsite. Access roads are also needed to these sites and often disturb more vegetation than the mining operation itself.

The amount of vegetation disturbed by other activities will vary between alternatives, depending on the amount of land disposal (See Table IV-1).

The forestry program would set back succession by removing trees. In clearcuts, this could be a relative long-term effect, particularly if the site does not naturally regenerate and artificial regeneration is required. In selection cuts, the overall community structure would only change slightly. By opening the canopy, plants associated with earlier successional stages become established providing a vegetative community of more diversity and layers. This type of forest management also improves the health of the remaining trees by reducing competition. New access roads developed to remove forest products eliminate vegetation for the duration of the harvest, but can then be reclaimed in grass and provide diversity to the vegetative community. Forest fire and controlled burning also sets back successional stages.

The land currently under grazing lease has been grazed for many years, halting succession at the grass-forb stage. In some cases, there is a shrub layer of rabbitbrush-sandsage or other low shrub. Grazing also tends to eliminate the establishment of woody seedlings such as cottonwoods in riparian areas. Heavy grazing can modify species composition sometimes decreasing certain desirable forage plants and allowing less desirable species to increase. With improved grazing systems, vegetative productivity can increase on grazed areas previously not in good condition.

A change in land status could ultimately result in vegetative modification. The disposal to private or by general sale allows for the most uncertainty regarding the vegetation currently present on the tract. There are many possible changes, including conversion of rangeland to agricultural use and development of residential areas in the forestlands of the Front Range.

Wildlife habitat improvement can also modify existing vegetation. Vegetative manipulations such as tree planting, clearcuts, controlled burns, protection of wetland and riparian areas can lead to a change in existing vegetation.

TABLE IV-1
Estimated Acres of Vegetation Affected Per Year by Alternative

	A	B	C	D	E
Forestry	35	35	20	25	25
Grazing	5710	5430	4630	5390	5390
Oil & Gas	60[1]	60[1]	60[1]	60[1]	60[1]
Coal	200-375[1]	200-375[1]	200-375[1]	200-375[1]	200-375[1]
Salable	40*	40*	40*	40*	40*
Locatable	40	40	40	40	40

[1] BLM subsurface estate

* 20 Public land, 20 BLM subsurface estate

Table IV-2 shows the acres of subsurface estate that could possibly be developed for the various types of minerals by Management Zone as a function of resource potential.

Table IV - 2
Possible Total Acres of Vegetation Affected over Subsurface Estate

Zone	Locatable	Salable	Coal	Oil & Gas*
1	All Low	960 high-mod.	179,590 high-mod.	7180 high-mod.
2	All Low	17,700 high-mod.	11,660 high-mod.	179,790 high-mod.
3	All Low	470 high-mod.	None	4120 high-mod.
4	2040 high-mod.	9980 high-mod.	6740 mod.	39,720 high-mod.
5	33,600 high-mod.	33,600 high-mod.	None	15,160 mod.
6	3240 high-mod.	3240 high	None	300 mod.
7	3810 mod.	3810 high	None	All Low
8	10,340 high-mod.	10,050 high	None	All Low
9	19,540 high-mod.	25,840 high-mod.	None	All Low
10	3030 mod.	5290 high-mod.	2360 high-mod.	2030 high-mod.
Total	75,600 high-mod.	148,690 high-mod.	200,350 high-mod.	248,300 high-mod.

* expect each well to disturb no more than 3 acres

NOTE: The possibility of development is assumed and therefore is shown as a function of resource potential (low, moderate, high).

LAND STATUS

A key issue across all alternatives is the amount of land planned for disposal. The national interest is, at times, best served if certain tracts of land are disposed of, or transferred to a non-federal entity. The interest of the nation is served when the land needs of state, local and private interests are met. We have identified these values and outlined them as follows:

State:

This includes public values where the management ability of the state is most efficient. The state may emphasize the development and care of a particular value or be administratively in a better position to oversee the value. The values would not require federal management and the tract may be made available for state acquisition.

Local (County or City):

Values identified here are public values but values important to the local communities or counties that have the ability to most efficiently manage these values. They include - community growth, watershed, sanitation, open space, institutional, parks, and recreation.

Private:

Here the values identified are not public values but rather individual or non-public. They are isolated tracts not accessable to anyone other than one party and without sufficient public values to warrant the acquisition of access. Private values include - ownership consolidation, residential, commercial, industrial, ingress and egress, economic unit, and traditional use.

General:

These lands do not have identified state, local, or private values and yet the tract is of such a size, shape, or location such that management costs exceed the national benefits, thus the disposal of such a parcel would be in the national interest. The disposal of such a tract would not be directed to any particular segment of society but offered in general.

The following complications enter the disposal or transfer issue. If unresolved an impact may occur to the detriment of the public.

1. Lands withdrawn (non-discretionary) by an agency, may require retention.

2. Segregated lands classifications (discretionary) or emergency withdrawals for a particular purpose may require retention.

3. Entry actions (non-discretionary) where claims to land by private persons under lawful entry can require retention of public land pending the outcome of the claims.

4. National Interest Values (discretionary) including threatened and endangered species, and areas of critical environmental concern may require retention in certain cases. This is the case if the values are unique or critical and would be lost if the lands were not retained, or would be managed inefficiently if disposed of.

5. Important wildlife values on a parcel may require limiting land sales to public agencies, or making a provision for the protection of these values with the sale.

6. Intensively managed commercial forests with a sustained timber harvest would be retained in federal ownership or disposed to the state forest service if nearby lands were managed similarly.

7. Where grazing leases exist, prior to terminating a lease, 2 years advance notice must be given. Any sale can be conditioned by assuring the lessee that the new owner recognizes and protects continued use for any unexpired term.

8. Public ownership could protect important watershed values, to accomplish water quality standards, or to safeguard floodplains from hazardous use and development.

9. Known water sources could influence but probably not restrict land status. If the water source is determined to be of great importance the lands may be retained in Federal ownership or disposed of only to a public agency. The purpose for which the water is being used (e.g. municipal waterworks) may require retention of water rights.

10. Those areas identified as important for open space may require retention or disposal to an appropriate agency to protect open space values.

11. Visual Quality Class I & II areas may require public ownership to protect scenic values.

12. Those areas classified for recreation may require public retention.

13. Those areas with cultural resources present should remain in public ownership. Federal ownership status may be required for NRHP's. Land status otherwise would depend on inventories.

14. Paleontologic resources classified Ia may require public retention whereas other classifications require on-site evaluation.

15. Lands classified as concern areas for geologic features and hazards need to have field investigations prior to determining their status.

16. Lands with valid existing rights in the form of mining claims cannot be disposed of except to the claimant through mineral patent or after the claim is relinguished or otherwise removed.

17. Lands deemed suitable for coal mining will have mineral rights reserved. Surface ownership may be retained depending on whether disposal of surface would substantially interfere with the development of the mineral resource.

18. Oil and gas rights will be retained if valuable or prospectively valuable.

19. Public roads must be protected during disposal by reviewing valid existing rights.

20. Any current use rights will be protected. Certain actions (R+PP applications) could require retention until final action on the request.

These 20 criteria frequently overlap and complement one another resulting in a decision not considered by the presence of just an individual criteria.

The public land acreages retained, disposed, or in need of further specific review are identifed by alternative in Tables IV - 3.

Table IV-3

Public Land Status by Alternative

	A	B	C	D	E
BLM	32,350	21,570	3470	4970	0
USFS	2860	13,350	2860	5040	23,640
NPS	120	0	0	120	120
State	0	1420	4310	3750	6820
County	0	0	2450	1900	1900
Private	770	1230	0	1480	1480
General	3930	2460	9130	6070	6070
Specific Review	0	0	17,810	16,700	0
TOTAL	40,030	40,030	40,030	40,030	40,030

ACCESS

Access that would be acquired by alternative can not be quantified by type or miles at this time. However, areas have been identified where access may be desirable to allow resource use or development. Access which may be considered desirable may be determined not needed if the costs of obtaining that access exceeds the resource benefits over the long term. For this reason the following tables may indicate that access is desirable but not needed at this time.

The disposal of public land reduces the need for public access. Any existing access or rights of way for roads will be provided for in all title transfers. Future access needs across public lands to be transferred or sold would be considered and provided for during the specific transfer/sale process.

ALTERNATIVE A

Table IV-4

	Desirable	Not Desirable	Total
Existing	7000	2700	9700
Disposed	0	920	920
Needed	450	0	450
Not Needed	21,760	1350	23,110
Disposed	170	2830	3000
Total	29,380	7800	37,180

There would be 7450 acres with public access provided.

ALTERNATIVE B

Table IV-5

	Desirable	Not Desirable	Total
Existing	6600	3150	9750
Disposed	0	480	480
Needed	5820	80	5900
Not Needed	16,060	1600	17,660
Disposed	890	2490	3380
Total	29,370	7800	37,170

There would be 12,420 acres with public access provided.

ALTERNATIVE C

Table IV-6

	Desirable	Not Desirable	Total
Existing	6760	600	7360
Disposed	240	3020	3260
Needed	450	0	450
Not Needed	20,360	260	20,620
Disposed	1570	3910	5480
Total	29,380	7790	37,170

There would be 7210 acres with public access provided.

ALTERNATIVE D

Table IV-7

	Desirable	Not Desirable	Total
Existing	6920	1150	8070
Disposed	80	2470	2550
Needed	1420	0	1420
Not Needed	19,900	740	20,640
Disposed	1060	3440	4500
Total	29,380	7800	37,180

There would be 8340 acres with public access provided.

ALTERNATIVE E

Table IV-8

	Desirable	Not Desirable	Total
Existing	6920	1150	8070
Disposed	80	2470	2550
Needed	0	0	0
Not Needed	21,320	740	22,060
Disposed	1060	3440	4500
Total	29,380	7800	37,180

There would be 6920 acres with public access provided.

WILDLIFE HABITAT

Habitat Management Plans (HMP) are the primary documents for planning wildlife habitat improvement projects and providing funding justification. Habitat is manipulated to increase, decrease or maintain wildlife populations within management parameters. Through close coordination with the Colorado Division of Wildlife (DOW), management goals are selected. Inventories are then conducted to identify limiting factors. When identified, the habitat can be manipulated to reduce or eliminate the limiting conditions. Habitat manipulations include water distribution, altering existing vegetation condition, instream structures, and managing barriers to regulate animal movements. Direct population control through hunting and fishing seasons, opening or closing access and cooperation with interested groups and individuals are other means of wildlife management that can be recommended in an HMP.

Retention of lands by BLM will result in continuation of developing, implementing,and maintaining projects associated with HMPs. New plans would be developed in the Front Range as funding allows.

Disposal can affect wildlife habitat in several ways. The overall effect would be positive for wildlife if the land goes to the DOW. Species would be emphasized on a priority basis according to their strategic plan.

If the land goes to State Parks, the nonconsumptive recreational values of wildlife would be emphasized along with other recreational activities, but not necessarily as a priority.

Local government could either leave the habitat basically alone as open space or develop the lands for recreation or other uses which would normally reduce the quality of the habitat.

Disposal to irrigation companies could have a number of results. Past activities, implemented by some companies, such as removal of large cottonwoods along reservoir dikes, are very detrimental to certain species, (e.g. bald eagles, owls, herons). Other actions implemented by the DOW in cooperation with irrigation companies, such as artificial reefs and nest boxes, have been very positive efforts. If public land is sold to irrigation companies, agreements on managment of these lands should accompany the title transfer.

If land is sold to the general public, the use of the land could vary from the status quo to development of residential sites. The resulting impacts on wildlife habitat from residential development would be significant.

Lands classified for specific review may or may not leave Federal ownership and would be managed as though they would be retained until completed.

If access is needed for habitat improvement, usually just administrative access is required to get personnel and equipment into a site. Public access can have either a positive or negative impact on wildlife depending on the situation. If wildlife populations need added human pressure (e.g. hunting) then opening an area up may be positive. However, some species need solitude, at least during specific periods of time (e.g. winter, reproduction). Added access in these situations would be harmful to those wildlife populations.

Construction of new roads and upgrading of existing roads in the Front Range can be detrimental to the limited existing habitat that remains. This is especially true just west of Denver and Boulder where new homes and subdivisions are intruding upon deer and elk winter ranges. Improved access results in habitat destruction and added human pressure on wildlife populations, especially during periods of peak stress. Also, as roads are constructed they usually follow bottom lands where aquatic resources are found. This results in an increase of channelization and sedimentation.

When wildlife needs are considered in forest management plans, habitat quality is improved for a variety of wildlife species as a result of the creation of openings in heavily forested areas. Conversely, those species that require or prefer large tracts of dense forests would be adversely affected by the same actions.

Livestock grazing can compete with wildlife for forage and living space, but no major conflicts have been identified within this area. Some operator initiated improvements such as spring developments and impoundments may enhance the wildlife habitat, while others, such as certain types of fences, may be detrimental.

Agricultural use can have both positive and negative effects. Crops can provide good food sources, (e.g. for geese, antelope, and doves); but fields provide little cover in winter. Brushy fence rows are rare, and harvesting can destroy nests.

Fire also can have positive and negative impacts. The negative effects are usually of short duration destroying and displacing animals. Longterm effects are generally beneficial since succession is set back providing diversity of habitat. Prescribed burning can be utilized to maximize the benefits of fire without most of the disadvantages.

Open space can provide valuable habitat near developed areas, but the scenic restraints may limit the type of wildlife habitat improvement projects allowed.

Primitive recreation designations have mostly positive impacts on wildlife by limiting human use. At the same time, these designations constrain habitat improvement potentials. Development of areas for intensive use, (e.g. campgrounds) would have detrimental effects on the wildlife resource.

Presence of cultural or paleontologic sites may affect placement of habitat improvement projects or delay their implementation.

Locatable mineral development, including road building to mining claims, would shrink the habitat available to wildlife during mine operation. Vegetation would also be removed on the site of operation, diminishing some additional habitat. Some of the potential negative impacts to wildlife can be minimized through stipulations applied to operations.

If development of salable minerals occurs, major habitat modification would occur and the life of the project would normally be long-term. Some of the habitat would not be reclaimable to original condition especially if there is a resulting highwall but might provide valuable wetland or aquatic habitat.

Coal mining would disturb habitat for the mining period plus reclamation time on lands determined to be suitable for mining. The reclamation period could vary from 1 year for agriculture to a few years for rangeland to 60+ years for mature cottonwood. The major potential negative impact would be mining in riparian zones. The coal basin is on the plains of eastern Colorado and the major sources of habitat diveristy in this area are the strings of riparian vegetation. These are major travel lanes and are utilized as nesting and roosting areas for raptors and other bird species. Reclamation of these riparian areas would be very slow and costly.

Most adverse impacts to wildlife from oil and gas are mitigated by means of seasonal stipulations and closures.

Actions resulting from use applications, such as rights-of-way and other use permits may negatively impact wildlife. As new areas are opened up to greater human use, wildlife habitat is altered and wildlife harassment, both intentional and unintentional, is increased. This is especially critical on big game winter ranges, important reproduction areas, and along migration routes. Rights-of-way occasionally provide wildlife benefits by opening wildlife travel corridors through dense vegetation.

Unauthorized uses, especially trespass homes, grazing, and woodcutting, often have negative effects on wildlife habitat without the impacts being considered for multiple use conflicts and mitigated.

Wildlife habitat potential shown on the following tables is based on these standards.

Excellent	- This habitat either 1) provides or has potential to provide crucial habitat for one or more "species of high interest" (see Appendix A) or 2) is an important wetland or riparian area.
Good	- Provides important habitat for species of high interest but potential does not exist to improve the habitat to the excellent category.
Fair	- Suitable habitat with limited potential for improvement.
Poor	- Marginal habitat with no potential for improvement because of limiting factors such as nearby housing developments or dry/seasonally dry lake beds.

ALTERNATIVE A

Table IV-9

	Potential				
	Excellent	Good	Fair	Poor	Total
Important - Retained by Fed. or to DOW	15,070	11,140	5450	160	31,820
Leaving Fed. not to DOW	980	280	830	0	2090
General- Retained by Fed. or to DOW	0	40	640	0	680
Leaving Fed. not to DOW	0	210	2290	80	2580
Total	16,050	11,670	9210	240	37,170

The 980 acres of excellent habitat are to leave Federal ownership with no projected change of use. This includes 120 acres of important fish habitat and 860 acres of mule deer and/or elk winter range, some of which is crucial (520 of which is scheduled to be sold to the State Parks).

The one tract leaving Federal ownership in the good potential category which has a projected future change of use to farmland could result in the loss of habitat capable of supporting one antelope if the tract is converted to corn.

The three current Habitat Mangement Plans (HMP) - Riverside Reservoir, Fort Collins Reservoirs, and South Platte Reservoirs would continue to be implemented and maintained as priorities allow. These three HMP have improved habitat for T&E species (bald eagle, white pelican), waterfowl and a variety of fish. Additional work is still needed within these habitat areas to further improve habitat for these target species and to improve habitat for other species as they are added to the target species list.

Since 26,210 acres of excellent/good potential habitat will be retained in federal/DOW control this alternative is the best for the greatest number of wildlife species.

ALTERNATIVE B

Table IV-10

	Potential				
	Excellent	Good	Fair	Poor	Total
Important -					
Retained by Fed. or to DOW	14,600	11,140	6220	160	32,120
Leaving Fed. not to DOW	1450	280	60	0	1790
General-					
Retained by Fed. or to DOW	0	40	640	0	680
Leaving Fed. not to DOW	0	210	2290	80	2580
Total	16,050	11,670	9210	240	37,170

The 890 acres of excellent potential, important habitat at Empire Reservoir, is scheduled to go to the Irrigation Company. The post disposal use of the inundated portion of this tract will be the same. The shoreline which provides cottonwoods for wintering bald eagles might be subject to a change of use. 520 acres are to go to State Parks as part of Golden Gate State Park and 40 acres of a mule deer winter concentration area are slated to be sold.

There is 280 acres of potential bald eagle, waterfowl and aquatic habitat at Bijou Reservoir to be sold to the Irrigation Company, while 60 acres of fair habitat at Prospect Reservoir will also be sold.

Of the general catetory land leaving federal ownership, 2370 acres are not expected to have a change of use after the sale, while 210 acres may change from rangeland to agriculture and potentially to residential.

The three current habitat managment plans will be implemented and maintained as funding and priorities allow. Another Habitat Management Plan in Management Zone 8 emphasizing bighorn sheep would be put in the priority listing for future funding.

Approximately 25,740 acres of excellent/good potential habitat will be under federal/DOW control. This total is slightly less than Alternative A, therefore, this alternative is slightly less beneficial to the overall wildlife resource.

ALTERNTIVE C

Table IV-11

	Potential				
	Excellent	Good	Fair	Poor	Total
Important -					
Retained by Fed. or to DOW	9180	9660	4640	0	23,480
Leaving Fed. not to DOW	6870	17600	1640	160	10,430
General -					
Retained by Fed. or to DOW	0	0	0	0	0
Leaving Fed. not to DOW	0	250	2930	80	3260
Total	16,050	11,670	9210	240	37,170

The tracts in Management Zone 3 leaving Federal ownership include Demmel Lake, Windsor #8 and 8 Annex, Reservoir #5 and #6, Empire Reservoir, Bijou Reservoir, Jackson Reservoir, Jumbo Reservoir and the Goodrich, Atwood and Dorsey tracts.

This would affect the Habitat Management Plans at Fort Collins and South Platte, removing 3/4 of the projects at Fort Collins and 1/3 of the proposed projects on the South Platte HMP from Federal control. Possibly the DOW would be able to continue these projects in cooperation with the Irrigation Companies.

These areas also provide habitat for wintering bald eagles, white pelican feeding, waterfowl nesting, deer, pheasants, quail, fish and many other nongame animals. Jackson and Jumbo Reservoirs also provide public fishing but State Parks and the Division of Wildlife have leased these reservoirs respectively.

Three tracts in Management Zone 2 considered important habitat are also up for disposal in this alternative, but the use of these tracts is not expected to change.

Two tracts in Zone 4, Crow Creek and George Creek, will also be disposed under this alternative. They provide habitat for antelope and raptors. The other 2 tracts in Zone 4 have only general wildlife values and are scheduled for general disposal under all alternatives.

In Zone 5 all tracts are to be disposed of, but two tracts, Rabbit Creek and St. Vrain, are to go to the DOW. The tracts to go into the general disposal category include winter range and winter concentration areas for mule deer, antelope habitat, elk winter range and crucial winter range, riparian areas, and brown trout habitat.

In Zone 6, the tracts to be disposed of are scheduled to go to Boulder County Parks so most of the habitat should be maintained.

In Zone 7, Eldorado Mountain provides excellent habitat for mule deer and is a winter concentration area. This area would be disposed to the Golden Gate Park.

Santa Fe Mountain in Zone 8 provides winter range for mule deer and elk. This area would be disposed to the general category. Of the excellent habitat leaving Federal ownership, 1140 acres have a projected post disposal use that would not be favorable to wildlife. This unit (806 east) helps support approximately 70 wintering mule deer and 5 wintering elk.

Most of the tracts in Zone 9 are to be disposed to the general category. Three of these tracts will probably have a change of use to residential use if they are sold. Snyder Mountain is in the winter range and a calving area for elk, crucial winter range for mule deer and provides excellent nesting habitat for raptors. Due to its small size, the numbers of animals utilizing it are not necesarily large, but developement of the east side of this tract into a residential area would affect many more acres of important habitat.

West Resort Creek is good habitat providing winter range for both mule deer and elk. The Deer Creek tract also provides winter range for mule deer, has a good riparian zone and trout fishery. Eighty eight fish per 500 feet were found in this creek with an average size of 9 1/2 - 10 inches. Both these tracts have potential to be developed if sold to private parties.

The other tracts up for disposal in this Zone are not anticipated to have a change of use.

Two tracts in Zone 10, Prospect and Horse Creek Reservoirs, are also scheduled for disposal. Most likely, the irrigation company will pick up these properites and the use won't change because the tracts of land are under water all or most of the time.

Only 18,840 acres of excellent and good potential habitat will be under federal or DOW control. For this reason, this alternative is the least beneficial to the areas wildlife resource.

ALTERNATIVE D

Table IV-12

	Potential				
	Excellent	Good	Fair	Poor	Total
Important -					
Retained by Fed. or to DOW	11,280	10,100	5300	0	26,680
Leaving Fed. not to DOW	4770	1310	980	160	7220
General-					
Retained by Fed. or to DOW	0	0	160	0	160
Leaving Fed. not to DOW	0	250	2780	80	3110
Total	16,050	11,660	9220	240	37,170

Several tracts discussed in Alternative C are also scheduled for disposal in Alternative D, as discussed below.

In Management Zone 3, all tracts involved in the Fort Collins HMP are to be disposed of including Reservoir #15, Demmel Lake, Reservoir #5, and Reservoir #6 which have nesting boxes on them. Empire Reservoir, Jackson Reservoir, Bijou Reservoir and Jumbo Reservoir tracts will also leave Federal Ownership, the inundated portions probably to the Irrigation Company and the shoreline to parks, DOW, or general. Prewitt and North Sterling Reservoirs are also to go to the DOW.

The only small tract associated with the South Platte that is not scheduled to be disposed of to the DOW is Goodrich which will be sold to the general public subject to the withdrawal for reclamation project.

All the tracts in Zone 4 are scheduled for disposal as in Alternative C.

Tracts in Zone 5 which were scheduled for general disposal in Alternative C will be 1) disposed to the DOW such as Cherokee Park, or 2) transferred to the Park Service (Castle Mountain), or 3) retained by either BLM or USFS (Hewett Gulch, Gianttrack Mountain, Fish Creek and Stone Canyon).

Tracts in Zone 6 will be treated the same as in Alternative C with the exception of Kossler Lake which will be retained in Federal ownership rather than either disposed or in the specific review category. It is not included in the specific review chart.

In Zone 9 Snyder Mountain, Yankee Creek and West Resort Creek are still to be disposed to the general public.

The two reservoirs in Zone 10 will, in all likelihood, be sold to the irrigation companies.

Approximately 21,380 acres of excellent and good potential habitat will be under federal or DOW control. For this reason, this alternative is less desirable than Alternatives A & B but of greater value to wildlife than Alternative C.

The specific review category for Land Status in Alternatives C and D could result in lossses of habitat and wildlife if these tracts are eventually sold. The following chart summarizes the wildlife values on these tracts.

UNIT	IMPACTED HABITAT*								COMMENTS
	WR	WCO	CA	CWR	UA	RCA	COA	YL	
509	Elk	Deer	-	-	-	-	-	-	-
602	Elk	-	-	-	-	-	-	Brook Trout	Left Hand Cr.; 17.32lb/Acre; 10 Fish/500'; over 7 1/2"
603	Elk Deer	-	-	-	-	-	-	Brook Trout	Same as Unit 602
801	Elk	-	-	-	-	-	-	-	-
802	Elk	Deer	-	-	-	-	-	Mt. Lion Turkey	N. Clear Creek Riparian
805	-	-	-	Deer	-	-	-	Mt. Lion	Virginia Canyon Riparian
806	-	-	-	Deer	-	-	-	Mt. Lion	-
807	Elk	-	Elk	Deer	-	Bighorn	-	Lion Pedtail hawk Brook Trout Brown Trout	Mill Cr.; 74.67lb/Acre; 250 Fish/500'; over 3" Fall River; 15 Fish/500' over 10 1/2"
808	Elk Deer	-	-	-	-	-	-	Turkey	Trail Cr. Riparian
809	Deer	-	-	-	-	-	-	-	Clear Cr. Riparian
813	Deer	-	-	-	-	-	Bighorn	Brook Trout	Bard Cr.; 47.8lb/Acre; 160 Fish/500'; over 8"
814	Deer Bighorn	-	-	-	-	Bighorn	-	Brown Trout Rainbow Trout	-
815	Deer	-	-	-	-	-	Bighorn	Redtail hawk Brown Trout Rainbow Trout	-
816	Deer	-	-	-	-	-	Bighorn	Mt. Lion Brook Trout	S. Clear Cr.; 30.04lb/500'; over 6"
817	Deer	-	-	-	-	Bighorn	-	-	Clear Cr. Riparian
818	-	-	-	-	-	Bighorn	-	-	-
820	Deer	-	-	-	-	-	-	-	-

*WR = Winter Range
WCO = Winter Concentration Area
CWR = Crucial Winter Range
RCA = Ram Concentration Area
CA = Calving Area
COA = Concentration Area
UA = Use Area
YL = Yearlong use

ALTERNATIVE E

This alternative is the same as Alternative D except that the lands designated for specific review and retention would be transferred to other agencies. The USFS would take over 18,840 and the DOW 3080 of these acres. These agencies would probably manage wildlife similarly to the BLM and therefore no major impacts would occur different from Alternative D.

The same 21,380 acres of excellent and good potential habitat as Alternative D will be retained in federal or DOW control. For this reason, this alternative is also less desirable than Alternatives A & B but of greater value to wildlife than Alternative C.

TIMBER AND FIREWOOD

As timberland leaves Federal ownership, it is likely that it will not be managed for its forest resources. Land that goes into the State and local park system will probably not be logged and areas used for mountain homes will not be managed for commercial forest products.

Legal and physical access are two important factors which limit forest management. Existing access increases the likelihood that the stand will be properly managed for fire, insects, disease and wood products. If access isn't available, temporary access can be gained by selling timber to a logger who will negotiate his own access to the sale.

The areas identified as important wildlife habitat will not significantly reduce the amount of forest land available for forest management. However, the size and type of harvesting operations, the time of year, and the size and type of stand treatments will have to be designed to accommodate wildlife habitat needs.

Grazing of forested lands can inhibit forest regeneration. Cattle trample and graze on seedlings and compact the soil. Land that would normally be classified as available may become unavailable due to reforestation problems.

Water quality concern areas will limit the amount of forest products that can be removed from these areas, the type of logging machinery used, road location and design, and the types of stand treatments (e.g. clearcutting vs. selective cutting).

Soil stability is one of the major factors limiting forest management. It is one of the factors that causes sites to be classified as withdrawn from general timber harvesting. Severity of soil problems will dictate logging methods, sale area design, and road construction design.

Prescribed burning can be used on all commercial forest lands as a forest management tool. It reduces wildfire hazards by eliminating excess fuel in a controlled event. Burning also prepares a seedbed for stand regeneration after a timber sale. Before burning, a slash burning permit must be obtained from the Department of Health, and the U.S. Weather Bureau is contacted for smoke dispersal forecasts to determine if weather conditions are suitable.

Land classified as important for open space inhibits forest management. Lesser amounts of forest products can be removed to design aesthetically pleasing sale areas and extra work with adjacent landowners is needed. Scenic quality areas classified as II or III also reduce the volume of forest products that can be removed. The size and type of harvesting area are restricted to avoid impacting the scenic quality.

The more primitive recreation categories would restrict forest management practices. Roads constructed for removal of forest products may have to be reclaimed or gated after harvesting.

Before timber harvesting operations begin, areas have to be cleared for cultural and paleontologic resources. Chapter II discusses the classifications of these areas, inventory level, and mitigation measures required, if any are discovered.

The presence of geologic features may require special care in layout of timber sales and associated access roads to avoid or mitigate potential problems.

When planning timber operations on unpatented mining claims, the claim owners will be contacted before the operating begins. If timber is removed from a claim and the claimant later determines that he needs timber for his mining operation, the BLM must provide another area where he can cut timber.

The determination of forestry potential in the tables refers to the productivity of the land. Only land in the Front Range (Zones 5-10) is included in the tables.

None - Less than 10% stocked with trees (non-forest lands).

Low - The land is at least 10% stocked with trees, yet grows less than 20 cubic feet of wood per acre per year. Noncommercial lands are included in this potential.

Medium - The site is capable of growing more than 20 but less than 40 cubic feet of wood per acre per year. Both available and unavailable lands can fall in this category.

High - The site grows more than 40 cubic feet of wood per acre per year. Both available and unavailable lands can fall into this category.

ALTERNATIVE A

Table IV-13

	Potential				
	High	Medium	Low	None	Total
Available	280	1890	0	0	2170
Unavailable	1380	14,090	0	0	15,470
Noncommercial	0	0	750	0	750
Nonforest	0	0	0	4810	4810
Total	1660	15,980	750	4810	23,200*

Due to land tenure adjustments, the available acreage decreases 80 acres from the current 2250 acres to 2170 acres. The unavailable acreage decreases 380 acres from 15,820 to 15,440. This would decrease the annual allowable cut from the current 400 cords to 380 cords.

ALTERNATIVE B

Table IV-14

	Potential				
	High	Medium	Low	None	Total
Available	280	1890	0	0	2170
Unavailable	1380	14,090	0	0	15,470
Noncommercial	0	0	810	0	810
Nonforest	0	0	0	4800	4800
Total	1660	15,980	810	4810	23,250*

This alternative is identical to Alternative A where the forestry program is concerned.

ALTERNATIVE C

Table IV-15

	Potential High	Medium	Low	None	Total
Available	280	1370	0	0	1650
Unavailable	1380	10,750	0	0	12,130
Noncommercial	0	0	610	0	610
Nonforest	0	0	0	3640	3640
Total	1660	12,120	610	3640	18,030*

Under this alternative, the available acreage decreases from 2250 acres to 1650 acres and the unavailable from 15,820 acres to 12,130 acres. Based on the current allowable cut of 400 cords, the allowable cut under this alternative would decrease to 230 cords.

ALTERNATIVE O

Table IV-16

	Potential High	Medium	Low	None	Total
Available	280	1470	0	0	1750
Unavailable	1380	14,010	0	0	15,390
Noncommercial	0	0	630	0	630
Nonforest	0	0	0	4630	4630
Total	1660	15,480	630	4630	22,400*

In this alternative the available acreage decreases from 2250 acres to 1750 acres, and the unavailable acreage drops from 15,820 to 15,390 acres, decreasing the allowable cut to 257 cords.

ALTERNATIVE E

The 1750 acres available and 15,390 unavailable forestlands would be transferred to the USFS. The 257 cords per year would probably still be made available to harvest by the Forest Service.

LIVESTOCK GRAZING

Land status will affect the BLM grazing program if land leaves Federal ownership. A two-year notification of revocation of grazing privileges is required if the land is to be disposed of. The use after disposal may still be grazing depending on the purchaser.

Other resources have an affect on the range program to the degree that they may preclude, either entirely or during certain time periods, grazing in a particular area or decrease the amount of forage and authorized use on an existing lease. These other land uses include: 1) important wildlife habitat, 2) commercial timber harvesting and associated activities, e.g. prescribed burning, 3) water quality concern areas, 4) presence of cultural or paleontologic resources requiring mitigation, 5) erosion problems, 6) intensive recreation sites, and 7) active mineral operations e.g. gravel pits, cyanide leaching millsites.

Certain recreational activities such as off road vehicle use can conflict with grazing operations when harassment of livestock occurs.

* NOTE: These tables include only a portion of the resource area and have taken into account the disposal of land, therefore the totals and potential columns will not match between alternatives.

The following operations lease's would be terminated after 2 year notice due to disposal of the surface.

Name	Number	ALTERNATIVE A	B	C	D	E
Billings	5902			X		
Bucklen	5903	X	X	X	X	X
Doak	5905	X	X	X	X	X
MGMC	5906	X		X		
Free Enterprises	5908	X		X		
Hall	5909			X		
Hagens	5911			X	X	X
Horse Creek Asst.	5912	X	X	X	X	X
Melia	5913	X	X	X	X	X
Parker	5915	X	X	X	X	X
Roberts	5916	X	X	X	X	X
Salisbery	5917	X	X	X	X	X
Segelke	5918			X	X	X
Whitney	5919	X	X	X	X	X
Young (inpart)	5920			X		
Romer	5921			X		
Schaffer	5923	X	X	X	X	X
Val Farms	5924			X		
Rhoades Bros.	5925	X	X	X	X	X
Kern	5926	X	X	X	X	X
Drew	5927	X	X	X	X	X

In the following tables (IV-17 through IV-21) potential for livestock grazing was based on topography, overstory vegetation, and understory vegetation. In addition, administrative ability to lease was used to determine areas of no potential.

ALTERNATIVE A

Table IV-17

	Potential None	Low	Moderate	Total
Leased	0	2340	3240	5580
Open	5510	22,480	1300	29,290
Closed	2270	20	10	2300
Total	7780	24,840	4550	37,170

There are 5580 acres currently leased, but 2040 of these acres (14 operators) are scheduled for disposal under this Alternative. 2420 acres open to application area also scheduled for disposal. There are 30 acres that have potential for grazing closed to application due to conflicts with wildlife habitat and recreation.

ALTERNATIVE B

Table IV-18

	Potential None	Low	Moderate	Total
Leased	0	2340	3240	5580
Open	0	17,240	1040	18,280
Closed	7790	5260	270	13,320
Total	7790	24,840	4550	37,180

The same number of acres are leased as under Alternative A, but 1800 acres (12 operators) are scheduled for disposal. There is also 1200 acres open for application which are on the disposal list. The 5530 acres closed to application have conflicts with wildlife habitat, recreation, and commercial forest land.

ALTERNATIVE C

Table IV-19

	Potential None	Low	Moderate	Total
Leased	0	2340	3240	5580
Open	5510	22,480	1300	29,290
Closed	2270	20	10	2300
Total	7780	24,840	4550	37,170

There are 3840 leased acres (20 operators + part of 1) scheduled for disposal. The 7100 acres open for application are also to be disposed of, and 16,340 acres need specific review. There are 30 acres closed to application due to wildlife and recreation conflicts.

ALTERNATIVE D

Table IV-20

	Potential None	Low	Moderate	Total
Leased	0	2340	3240	5580
Open	170	17,240	1070	18,480
Closed	7620	5260	240	13,120
Total	7790	24,840	4550	37,180

There are 1600 acres leased for grazing (14 operators) scheduled for disposal. There are 3310 acres of open acres also scheduled for disposal and 12,260 acres for specific review. Approximately 5500 acres are closed to application due to conflicts with wildlife, recreation, and forestry. Also, 2950 of these acres need specific review and 2060 are scheduled for disposal.

ALTERNATIVE E

Table IV-21

	Potential			
	None	Low	Moderate	Total
Leased	0	2340	3240	5580
Open	170	17,240	1070	18,480
Closed	7620	5260	240	13,120
Total	7790	24,840	4550	37,180

There are 1600 acres leased for grazing (14 operators) scheduled for disposal. There are 3310 acres of open acres also scheduled for disposal. Approximately 5500 acres are closed to application due to conflicts with wildlife, recreation, and forestry of which 2060 are scheduled for disposal. An additional 60 acres at Riverside Reservoir (Management Unit 307) presently leased and that would be transfered to the DOW may have the lease cancelled and be closed to grazing.

WATER QUALITY, FLOODPLAINS, AND SOURCES

Management actions that impact soils by causing increased erosion consequently impact water quality due to increased sediment load. However, the limited amounts of additional surface disturbance likely under any of the alternatives is not expected to result in a significant increase in sediment load in any of the streams in the area. This increase is anticipated to be so small that it could not be distinguished from the normal observed seasonal fluctuations. Disposal of public lands may result in an estimated 10% on-site increase in sediment yield if these lands are subdivided for residential development. Mining operations have the potential to significantly contaminate surface and groundwater with sediment resulting from major surface disturbance, by leaching of acid-forming and toxic materials from dumps, tailings ponds, and stockpile areas, and from release of chemical agents used in mineral processing. Large strip mines can cause dewatering of surrounding aquifers as well as increases in sediment yield due to surface disturbance and processing of rock materials. Oil and gas operations, particularly in densely developed fields have the potential to contaminate surface water supplies through increased sediment yield from drill pads and access roads and release of oil field brines, crude oil, or drilling fluids. Groundwater could also be contaminated if these fluids infiltrate from the surface, or if improperly cased or plugged wells allow contamination of fresh-water aquifers by these same fluids present in the well.

Open pit coal mining has the potential for adverse impacts to groundwater. In some places, coal is overlain by, or contains, groundwater. Localized destruction of these aquifers by surface coal mining and consequent dewatering of surrounding areas is a possibility. Degradation of groundwater quality is also possible through leaching of salts or other toxic substances from replaced overburden and stockpiles.

All seven public land water sources needed for administration of the public lands are retained under all the alternatives. Any management proposals in these areas will be designed to minimize or prevent adverse impacts to these water sources. Table IV-22 shows how many acres within the various managment categories would be disposed of under each of the alternatives.

Table-IV-22

		Acres disposed of by Alternative				
	Existing Acres	A	B	C	D	E
Concern Areas for						
1. Floodplain	290	0	40	190	190	190
2. Pollution problem	16,490	0	0	600	540	540
3. Municipal watershed	7100	0	0	1570	1420	1420
General Areas	16,150					
Total	40,030					

SOIL EROSION

No quantifiable differences between the alternatives exist relative to impacts on soil resources with the exception of land disposal decisions. Development of disposed lands may cause increased soil erosion in Alternatives C, D, and E compared to Alternatives A and B. Residential development and conversion to cropland are the land uses that would cause the greatest soil erosion.

Access acquisition and construction would result in a slight, short-term increase in sediment yield until the disturbance has been stabilized. A slight, long-term increase in sediment yield will remain due to vehicular use and maintenance activities. Timber and firewood harvesting also creates short-term increases in sediment yield due to road construction and ground disturbance. This increased yield ceases upon revegetation of the disturbed sites. Leasing of lands for agricultural use could cause localized but significant long-term increases in soil loss. Prescribed burning and consequent loss of ground cover would cause a short-term, localized increase in soil erosion until vegetation is reestablished.

Mineral development and production may cause significant soil erosion on a local scale depending upon the size of the project. Removal, stockpiling, and replacement of topsoil causes large changes in the physical and biological properties of soils. However, this mitigates a possible total loss of the resource if it is not stockpiled. Actual physical loss of soil occurs due to wind and water erosion on disturbed areas and topsoil stockpiles. Large gravel and coal mines pose the greatest possibility of long-term significant adverse impacts to soil resources. Other minerals activities are expected to have only slight short-term effects.

Table IV-23 displays acreages of soils by management category and how many within each of these categories would be disposed of under the plan alternatives.

Table-1V-23

		Acres disposed of by Alternative				
	Existing Acres	A	B	C	D	E
Areas of Concern	850	0	0	0	0	0
Critical/Severe	0	0	0	0	0	0
Moderate	4000	0	0	200	200	200
Stable/Slight	35,180	210	1100	900	500	500
Total	40,030					

AGRICULTURAL USE

Currently, only 65 acres of public land are cultivated under a temporary use permit. Minimal opportunity exists for agricultural use of public land in the Resource Area. Occasionally some public land is inadvertently included in an individual's existing farm operation and when this is discovered, a charge is assessed for past use and continued use is either authorized or disallowed. There have been no applications for agricultural permits prior to use.

Public lands generally have either no potential for agriculture (e.g. inundated), or very low potential. The lands in the Front Range are normally not suited to agricultural development and the lands in the Eastern Plains are usually more suited to rangeland.

Development of subsurface estate under private surface may have an effect on agriculture. See the vegetation section for type of disturbance and effects. The affect of emphasizing other resources in a particular unit often has the effect of eliminating that unit from application for an agricultural permit. This is obvious in alternatives B, D and E where often times the areas are going to be emphasized for wildlife habitat improvement, grazing, or forest product production which results in the area being closed to application for agriculture.

ALTERNATIVE A

Table IV-24

	Potential		
	None	Low	Total
Open to Application	5500	29,290	34,790
Closed to Application	2270	100	2370
Total	7770	29,390	37,160

Of the acres open to application with low potential, 1950 are slated for disposal with the projected future use not compatible with agriculture. Another 3720 acres as scheduled for disposal with the future use projected not to change from the present. The acres closed to agricultural application which have low potential are closed due to conflicts with recreation and wildlife habitat.

ALTERNATIVE B

Table IV-25

	Potential		
	None	Low	Total
Open to Application	0	6300	6300
Closed to Application	7780	23,090	30,870
Total	7780	29,390	37,170

Of the low potential land still open to application, 1170 acres are scheduled to leave federal ownership with no projected change of use and 240 acres would go to an agency which would not be utilizing them for farmland. The 23,090 acres of low potential land are closed to agricultural application due to one or more of the following conflicts: important wildlife habitat, commercial forestry, intensive recreation, grazing leases, and/or soil erosion hazard.

ALTERNATIVE C

Table IV-26

	Potential		
	None	Low	Total
Open to Application	5570	29,290	34,860
Closed to Application	2210	100	2310
Total	7780	29,390	37,170

Nearly all the land open to application would leave federal ownership and 24,050 acres would probably not be used for agricultural purposes after disposal. Approximately 4920 acres slated for disposal under this alternative would not have agriculture eliminated as a potential future use of the land, though the land may not be suitable.

ALTERNATIVE D

Table IV-27

	Potential		
	None	Low	Total
Open to Application	170	1720	1890
Closed to Application	7610	27,670	35,280
Total	7780	29,390	37,170

Of the 1720 acres open to application, only 60 are scheduled to remain in federal ownership. The acres closed to application have been closed for a variety of reasons as discussed under Alternative B.

ALTERNATIVE E

The table and analysis for Alternative E is the same as for Alternative D.

WILDFIRE

Cooperative fire agreements are needed to protect the commercial forest lands in the Resource Area since the BLM lacks the manpower and equipment to suppress wildfires in the area. Cooperative agreements with the USFS and counties provide initial attack and fire suppression. Since wildfire occurrance on BLM land in the area has historically been low, cooperative agreements and existing access appear to be sufficient.

Possible ignition sources include accidental starts from logging or fuelwood cutting operations and other recreational users of the Public Lands or natural, such as lightning.

Forest management can reduce potential ignition by removing dry fuel from the forest. Livestock grazing also reduces the chances of ignition occurring.

PRESCRIBED BURNING

All alternatives would permit prescribed burning after case by case evaluation. The criteria (see Chapter II) used to determine acceptability would mitigate safety hazards and other adverse effects.

OPEN SPACE

There are some isolated areas where BLM can affect open space by designation, primarily along the front range. However, the scattered nature of BLM surface tracts results in very little effect on the perception of open space in most areas. The activities which could negatively affect open space are:

1. Minerals Development: Mining would impact open space values during the life of the mine. The effects will be mitigated by required reclamation.
2. Disposal: Lands sold under the general and private category could result in the loss of open space. Protection of open space values could be made by public retention of those lands with high open space values.

The expected differences between alternatives are depicted on Table IV-40. Under each alternative the estimated acreages in open space categories is depicted. It was assumed that general or private disposal in specific areas would result in the loss of open space. Disposal to state or local governments was assumed to have no impact on open space.

Table IV-28

Designation of Open Space by Alternative

	A	B	C	D	E
Important-					
-Protected	0	15,250	0	15,840	0
-Not Protected	16,200	0	14,480	0	15,840
-Disposed of	80	1030	1800	440	440
General	20,890	20,890	20,890	20,890	20,890
Total	37,170	37,170	37,170	37,170	37,170

This does not include that lost to mining prior to reclamation. The majority of mining, especially coal mining, is expected to occur in general areas rather than important open space areas.

In conclusion, there are differences in open space between alternatives which arise from the amount protected and the amount identified for disposal.

SCENIC QUALITY

The impact upon visual resources is extremely limited, regardless of which alternative is chosen. The scattered nature of public land minimizes the potential to affect the overall landscape. Under all alternatives the emphasis of visual management is on mitigation rather than exclusion. The activities which could affect scenic quality are:

1. Forest harvesting: roadbuilding and tree cutting could cause deterioration of visual quality. These effects will be mitigated by limiting the size and shape of the acreage involved in cuts, road and trail construction standards, and revegetation.
2. Locatable and salable mineral extraction: Mining will impact visual quality during the life of the mine. The effects will be mitigated by stipulations restricting size of the area disturbed and by requiring reclamation.
3. Coal extraction: Same as #2. It should be noted that the areas of high coal potential are in areas of low scenic quality (Classes III & IV).
4. Oil and Gas Extraction: Same as #2.
5. Disposal: Lands sold under the general and private category could impact scenic quality and lessen the VRM Class rating on particular tracts. The impact will be mitigated by primarily selling those lands whose VRM Class is III or IV.

The expected differences in scenic quality between alternatives is portrayed by VRM class (see Affected Environment) on Table IV-29. It was assumed that general or private disposal in specific areas would result in the lowering of VRM Class by 1 which is accounted for in the table. Disposal to state or local governments was assumed to have no impact on scenic quality. Due to mitigation other actions were assumed to have insignificant impacts on scenic quality and therefore are not accounted for in the table.

Table IV-29

		Alternative				
VRM Class	Potential*	A	B	C	D	E
I	0	0	0	0	0	0
II	14,870	14,870	14,870	13,940	14,870	14,870
III	16,370	14,040	14,120	13,120	13,800	13,800
IV	5930	8260	8180	10,110	8500	8500
V	0	0	0	0	0	0
Total	37,170	37,170	37,170	37,170	37,170	37,170

*Potential indicates the highest scenic class an area could be.

In conclusion, there is little difference in visual quality between the alternatives. The differences that do exist primarily result from disposal.

RECREATION OPPORTUNITIES

The bottom line is the overall effect on the recreation users from each of the alternatives. The publics' recreation opportunity needs and preferences can be garnered from the Colorado SCORP report mentioned in Chapter III. However the SCORP is too broad-brushed for this RMP. Therefore, field observations by experienced BLM personnel gave us the best estimates of both public users' needs, preferences and opportunities offered. Since almost all opportunities are available on private and other public lands and much closer to the urban populations, recreational impacts upon northeast resource area lands is minimal.

The impact on recreational opportunities is minimal for all alternatives. As indicated in the affected environment the major activity occurring on BLM administered land is wildlife hunting and viewing. Recreational activities can be affected by several BLM actions as follows:

1. Disposal to private or general sources could lessen opportunities by one level on particular tracts. Lands now used for public recreation would become subject to private restrictions.
2. Access attainment on selected sites (i.e. Ft. Collins Reservoir) would enhance recreational use. Additional access should be translated into increased recreation use.
3. Changes in wildlife habitat would affect the quantity and quality of experience to hunter and viewers. Increases in wildlife will create greater use and should result in greater satisfaction by the user. If some tracts are utilized for habitat, this would negatively impact off-road vehicle (ORV) users. ORV use would be restricted or prohibited in some important wildlife habitat areas.
4. Forest management would have little impact on recreational opportunities. In the short-term of harvest operations recreation would be reduced, but increased access could enhance recreational use in the long-term.
5. Most activities which impact water quality and sources have little effect on recreation. Pollution or reduction of water from a current source could result in reduced recreation by lessening fish or wildlife resources.
6. Wildfire and prescribed burning would lessen recreational use during and shortly after. Types of use can change afterward such as from hiking to hunting due to a more open area than previously.
7. Mining or oil and gas development eliminates recreational use of an area while the operation is occurring. In many instances, after the mining phase new access may lead to greater use of the area than previously. Coal mining can be expected to reduce recreational use the most, but mining is expected to occur in areas where little present recreational use is occurring.
8. Increased publicity, maps, and signing can lead to increased recreational use. The use would be related to the extent and type of information, and the specific locale.

Overall there is no regionally significant difference between alternatives. However, some difference in total use on public land can be expected. Potential on the following tables is based on the present character of the land. It is portrayed using ROS (see Affected Environment). In this way changes in expected recreation opportunities can be seen by the acres listed in categories other than the given potential. A continued increase in use of 3 to 8 percent per year can be expected. This is an estimate based on the types of current use where some activities increase at a greater pace than others.

In the following tables (IV-30 through 36) potential is equated to current recreational setting. The resulting settings are listed in the left column. The tables therefore show how many acres will remain the same and how many will be changed (and to what type of setting).

Ward Hill (Unit 602) is the only location closed to ORV use. All other areas in the resource area are open to ORV use. This means only 132 acres at Ward Hill are unavailable for ORV use in Northeast Resource Area. This acreage is the same under all alternatives.

ALTERNATIVE A

Retained lands will be managed to provide the opportunities shown on Table IV-30.

Table IV-30

Potential

	SPNM	SPM	RN	R	U
SPNM	320	0	0	0	0
SPM	40	3760	0	0	0
RN	0	8330	7190	0	0
R	0	850	5650	9480	0
U	0	0	0	540	930

Disposal would reduce opportunities on 80 acres of roaded natural character and potential.

ALTERNATIVE B

This alternative is similar to Alternative A except 930 acres more would be disposed of and corresponding recreational opportunity lost. As shown on Table IV-31 a significantly higher amount of Semi-Primitive potential would be realized.

Table IV-31

Potential

	SPNM	SPM	RN	R	U
SPNM	280	0	0	0	0
SPM	40	11,300	0	0	0
RN	0	1640	8860	0	0
R	0	0	4590	8520	0
U	0	0	0	0	930

Table IV-32 shows the acres that would be disposed of where recreational opportunity might be lost.

Table IV-32

Potential

	SPNM	SPM	RN	R	U
SPNM	40	0	0	0	0
SPM	0	0	0	0	0
RN	0	0	970	0	0
R	0	0	0	0	0
U	0	0	0	0	0

ALTERNATIVE C

A larger amount of land would be disposed of than in the other alternatives, thereby decreasing recreational opportunities and wildlife habitat which could affect wildlife related recreation. Overall the result would remain below a 10% decrease in recreational use of BLM surface lands. Table IV-33 shows how the retained lands would be managed.

Table IV-33

Potential

	SPNM	SPM	RN	R	U
SPNM	320	0	0	0	0
SPM	0	3720	0	0	0
RN	0	8010	7110	0	0
R	0	850	5650	8270	0
U	0	0	0	540	930

Table IV-34 shows the acres that would be disposed of thereby affecting recreational opportunity.

Table IV-34

Potential

	SPNM	SPM	RN	R	U
SPNM	0	0	0	0	0
SPM	40	80	0	0	0
RN	0	0	480	0	0
R	0	0	0	1170	0
U	0	0	0	0	0

ALTERNATIVE D

This alternative would result in an overall loss of 1 to 2% of the recreational opportunity on BLM surface lands due to disposal. Table IV-35 displays the retained land by potential and management of recreational opportunity.

Table IV-35

Potential

	SPNM	SPM	RN	R	U
SPNM	280	0	0	0	0
SPM	40	11,170	0	0	0
RN	0	1650	8510	0	0
R	0	0	4590	8520	0
U	0	0	0	0	930

Table IV-36 shows the acres that could be disposed of and affect recreational use.

Table IV-36

Potential

	SPNM	SPM	RN	R	U
SPNM	0	0	0	0	0
SPM	40	80	0	0	0
RN	0	0	360	0	0
R	0	0	0	0	0
U	0	0	0	0	0

ALTERNATIVE E

This alternatives recreational analysis and tables would be the same as Alternative D.

CULTURAL

Archaeologic

Surface and subsurface activities can cause impacts to archaeological resources of varying degrees depending on the type of disturbance. Surface operations (e.g. mining, grazing) can lead to compaction, erosion and site exposure. Destruction of the resource by collectors and vandals with increased use and access to areas can occur. Actions which have the greatest potential for affecting archaeological resources are mining and disposal.

Stipulations requiring field surveys, mitigation (or coal unsuitability), and protection of finds are included in project plans. While the possible negative consequences of activities need to be stressed, the possibility of making finds which otherwise would have remained unknown, also exists.

Other actions which could impact archaelogical resources, although the impacts are mitigated by regulations are:

1. Increased use in wildlife habitat areas could lead to trampling, rubbing and compaction.
2. Timber and firewood sales could cause surface disturbance, vandalism, erosion, and exposure of sites.
3. Livestock grazing in leased areas can cause surface disturbance, trampling, and compaction.
4. Severe soil erosion may obliterate sites.
5. Agricultural use could lead to loss of resources.
6. Prescribed burns.
7. Class I scenic quality areas could lead to loss of resources since no stabilization, restoration, or excavation is permitted.
8. Possible conflicts exist with paleontological activity in Class I areas.
9. New roads and trails may impact sites.
10. Pest Control could cause surface disturbance, vandalism, erosion, and exposure of sites.
11. Increased public information has the positive effect of creating awareness, but the negative affect of exposing sites to vandalism.

Protection and avoidance of identified sites are the primary BLM options. Given the required compliance with existing regulations the impact to cultural resources should be substantially mitigated under any of the alternatives.

Table IV-37 displays the acreage found in the archaeology categories for both known sites and potential for sites.

TABLE IV-37

	Acres
A. NRHP sites -	2980
B. State/local sites -	6900
C. Limited sites -	750
D. High Potential -	21,640
E. Moderate Potential -	1820
F. Low Potential -	3080
Total	37,170

Historic

Both surface and subsurface disturbance can cause impacts to historic resources. The degree of impact depends upon the amount of activity. Considering compliance requirements found in existing regulations, the impacts to historic resource will not differ, generally, between alternatives.

Destruction of historic resources can occur from several BLM initiated actions. The most obvious is through disposal of the public lands. Prior to any such disposal, historic values will be considered and all appropriate regulations will be implemented. Those lands with significant historic resources will not be subject to disposal.

Other activities that can affect historic resources include:

1. Increased access which can lead to more vandalism including wood stripping, artifact collecting, and damage through site misuse.
2. The development of wildlife habitat improvements, grazing improvements, and other natural resource projects can cause surface disturbance, trampling, cattle rubbing, compaction of sites, and increased vandalism due to more access.
3. Equally, timber sales and firewood sites can cause increased vandalism due to more access.
4. Agricultural development can also cause surface disturbance due to plowing and land modifications.
5. Increased recreation, particularly motorized, can lead to vandalism, site stripping, and other negative impacts. However, there is potential for the stabilization and use of historic sites for interpretive purposes within a recreation setting.
6. Areas that are open to locatable and/or salable minerals can lead to surface disturbance, vandalism, demolition, and modification of historic mining sites. This is particularly true of hard rock mining areas. On the other hand, coal leasing related damage to historic sites is mitigated under Criterion 7 of the Coal Leasing Regulations and through the Programmatic Memorandum of Agreement between BLM/OSM/USGS/and the Advisory Council on Historic Preservation.
7. Increased public awareness of historic sites through Public Information has a positive effect for such sites, but can also be negative by increasing knowledge of sites, thus leading to vandalism.

Thus, while BLM actions can have effects on historic sites and resources, they can usually be mitigated and the effects are not considered to be great.

Table IV-38 shows the acreage found in the historic catagories for both known sites and for potential sites.

TABLE IV-38

	Acres
A. NRHP sites	3310
B. State/local sites	9590
C. Limited sites	750
D. High Potential	18,700
E. Moderate Potential	1620
F. Low Potential	3200
Total	37,170

PALEONTOLOGIC

Impact to fossil remains could be caused by all surface and subsurface disturbing activities including road construction and residential development, although mineral extraction could have the most effect.

Destruction of fossil remains by vandals due to increased accessibility could also be caused by other resource uses. Although the destruction of fossils of scientific value constitutes the most significant impact to paleontology, the beneficial effect of increased exposure of otherwise hidden fossil remains should be recognized.

The only quantifiable differences between the alternatives relative to impacts on paleontologic resources are caused by general disposal. Fossils may be adversely affected or lost if the post disposal land use is assumed to be residential.

ALTERNATIVES A and B

Table IV-39

	Acres Adversely Affected	Acres Not Affected	Total
Class Ia	0	0	0
Class Ib	0	800	800
Class II	210	7430	7640
Class III	0	28,730	28,730
Total	210	36,960	37,170

The only potential adverse effects under these alternatives involve lands which are believed to contain fossils, but that are not anticipated to be of scientific value (Class II).

ALTERNATIVE C

Table IV-40

	Acres Adversely Affected	Acres Not Affected	Total
Class Ia	0	0	0
Class Ib	0	800	800
Class II	390	7250	7640
Class III	560	28,170	28,730
Total	950	36,220	37,170

Even under this limited retention alternative, adverse impacts would be limited to lands believed to have no scientifically valuable fossils (Classes II and III).

ALTERNATIVE D

Table IV-41

	Acres Adversely Affected	Acres Not Affected	Total
Class Ia	0	0	0
Class Ib	0	800	800
Class II	320	7320	7640
Class III	240	28,490	28,730
Total	560	36,610	37,170

As above, impacts are limited to lands having low potential for paleontologic resources.

ALTERNATIVE E

The analysis and table for this alternative is the same as Alternative D.

GEOLOGIC FEATURES AND HAZARDS

Impacts to geologic features and hazards could be caused by surface and subsurface disturbance activities, although mineral extraction would have the greatest effect.

Alteration or destruction of geologic features could partially or totally destroy their scenic quality, scientific, and educational usefulness. Disturbance of geologic hazards could aggravate the danger they pose to property and human safety.

No adverse impacts have been identified under Alternatives A and B. A possible adverse impact to an identified geologic feature due to post disposal residential development occurs under Alternatives C, D and E. The 40 acre Management Unit 508 contains a good exposure of tilted sedimentary rocks of the Fountain Formation.

MINERALS

The primary impact on minerals is the degree of availability of the land for mineral development. The degree of availability is directly related to the prohibition or restrictions placed on development. The Federal Land Policy and Management Act (FLPMA) requires that restrictions be imposed on all minerals activities to prevent unnecessary and undue degradation of the BLM administered lands. These stipulations may result in some delay or loss of production.

Restrictions imposed due to water quality, soil erosion, open space, scenic quality, recreational opportunity, geologic features and hazards, and air quality concerns may cause some delay or loss of mineral production due to requirements for project design, location, and operating standards. Mineral production capability is maximized by totally unrestricted classifications and is reduced proportional to the restrictions imposed, dropping to zero in the case of totally restricted classification or prohibition. A rating system is used to quantify this degree of availability. This system displays the acres of land according to their geologic potential for certain minerals and the development restrictions.

The development restrictions are listed by management unit for public lands in Appendix B, and by management zone for subsurface estate in Appendix C. The geologic potential of the federal lands was determined by a Level I inventory (literature search). The criteria used in classifying potential are explained in Appendix A. A favorability rating is then calculated for each mineral under each alternative so that the differences in impacts to minerals availability can be quantified. This index can be converted to a percentage with 100% corresponding to minimum access restrictions for mineral operations and 0% representing total prohibition. Refer to Appendix A for a more complete explanation of the rating system.

Locatable Minerals

Surface management of locatable mineral operations is required by federal regulations (43 CFR 3809). Notices of Intent and Plans of Operations must contain stipulations to prevent unnecessary and undue degradation of the public lands. These stipulations may cause some delay or loss of mineral production.

Disposal of public land under the Recreation and Public Purposes Act or Section 203 FLPMA would close the reserved mineral estate to the location of mining claims due to the lack of regulations authorizing the disposition of locatable minerals on split estate lands. The minerals would remain unavailable until such regulations are enacted. This would require Departmental action and is, therefore, beyond the scope of this plan.

Each alternative designates certain land for disposal. This has the effect of changing the availability of the land from either available or concern area to closed. A separate calculation for this impact has been made for each alternative.

Designation of land as a concern area due to important wildlife habitat may decrease the locatable mineral availability because of stipulations such as seasonal closures on operations, or avoiding disturbance of crucial habitat areas. In the case of an irresolvable conflict with a federally designated threatened or endangered species or its habitat, locatable mineral operations can be precluded, thus resulting in a total loss of the mineral deposit.

Existence of cultural or paleontological resources within an area of locatable mineral operations may cause a delay of no more than 10 days to those operations. It is the responsibility of the operator to report and protect any such resources found during the course of operations; it is the federal government's responsibility to inventory, evaluate, and protect or remove the resource.

Designation of lands as available maximizes the availability for locatable minerals development. Designation as a concern area may slightly decrease availability due to requiring stipulations to prevent unnecessary and undue degradation of identified non-mineral resource values. The closed designation has varying effects on availability depending upon the type of withdrawal. This could result in a minimal delay or loss to total prohibition of mineral development. Closed lands in Alternative A are those which are presently withdrawn or classified, thus closing the land to mineral entry. None of the other alternatives recommends the closing of additional lands. The Bureau's ongoing withdrawal review program, which is beyond the scope and authority of this plan, may recommend the revocation of these withdrawals and classifications.

Therefore, the favorability percentage for each of the alternatives does not represent a decision range that is under full discretionary control of the Area Manager as it would be for oil and gas or salable minerals. The more meaningful comparison between the alternatives lies in the calculations based on the question of disposal, as this type of decision is within the Area Manager's discretionary authority.

Analysis of Subsurface Estate

Access restrictions versus locatable mineral potential for Management Zones 1 through 10 found in Appendix C is summarized in the following table:

Table IV-42

Potential

	High	Moderate	Low	Total
Available	0	2890	100,270	103,160
Concern	9870	62,840	46,000	8,710
Closed	0	26,220	65,100	91,320
Total	9870	91,950	211,370	313,190

Using the minerals rating system, a favorability index of 2.68 can be assigned for subsurface locatable minerals management. If all the acreage were placed in the available category, an index of 4.07 would result (this may be assigned a 100% favorability). If all acres were closed, an index of 1.36 would result (0% favorability). Therefore, the 2.68 factor represents a 48.7% favorability compared to unrestricted availability of these lands. The lands are closed due to two reasons, both of which are beyond the scope of this plan: (1) Some of these lands are patented with a reservation of all mineral rights under the Recreation and Public Purposes Act and are closed to mining claims; (2) The remaining lands represent mineral interests acquired by the United States. Locatable minerals cannot be claimed on these lands but must be leased according to federal regulations (43 CFR 3500). The resulting low favorability rating does not indicate decisions by this plan, but represents the acres closed to the location of mining claims for the two reasons mentioned above.

Analysis of Public Land

ALTERNATIVE A

Table IV-43

Potential

	High	Moderate	Low	Total
Available	0	280	3930	4210
Concern	19,420	1620	8250	29,290
Closed	1460	1640	570	3670
Total	20,880	3540	12,750	37,170

Using the minerals rating system, a favorability index of 4.34 can be assigned for locatable minerals.

Minimal restrictions for locatable minerals (all acreage placed in the available category) would result in a rating of 6.67 (A 100% favorability). Maximum restrictions (all acres closed) would result in a rating of 2.22 (0% favorability). Therefore, Alternative A represents a 47.6% favorability.

This analysis is for current land status only. Under Alternative A, 4700 acres are designated for disposal. Factoring in this loss of locatability due to such disposal, the acreage figures of the above table become:

Table IV-43a

Potential

	High	Moderate	Low	Total
Available	0	240	760	1,000
Concern	19,250	430	8,250	27,930
Closed	1630	2870	3740	8,240
Total	20,880	3540	12,750	37,170

The favorability rating drops to 4.08, or 41.8%. This is a slight drop in favorability index despite the disposal of 12.4% of the Resource Area's public land due to most of this acreage having low potential for the occurrence of locatable minerals.

ALTERNATIVE B

The difference of this alternative from Alternative A with respect to locatable minerals is to move 320 acres from available to concern area as follows: Management unit 202, 120 acres of low potential; unit 401, 120 acres of low potential; unit 514, 40 acres of moderate potential; and unit 604, 40 of the 80 acres of moderate potential. This results in the following:

Table IV-44

Potential

	High	Moderate	Low	Total
Available	0	200	3730	3930
Concern	19,420	1700	8450	29,570
Closed	1460	1640	570	3670
Total	20,880	3540	12,750	37,170

A favorability index of 4.33 or 47.4% decision range utilized results, representing a very small decrease in minerals availability from Alternative A.

Factoring in the loss due to disposal, however, further decreases the favorability index:

Table IV-44a

Potential

	High	Moderate	Low	Total
Available	0	200	520	720
Concern	19,420	1060	7140	27,620
Closed	1460	2280	5090	8830
Total	20,880	3540	12,750	37,170

This results in an index of 4.08 or 41.8%. Again, as in Alternative A, most of the acreage designated for disposal is of low locatable mineral potential.

ALTERNATIVE C

The table and analysis for Alternative C is the same as it is for Alternative A and will not be repeated here. However, factoring in 14,570 acres of land to be disposed decreases locatable minerals availability:

Table IV-45

Potential

	High	Moderate	Low	Total
Available	0	0	0	0
Concern	18,280	0	2960	21,240
Closed	2600	3540	9790	15,930
Total	20,880	3540	12,750	37,170

The favorability index under this Alternative drops to 3.77, or 34.8%.

ALTERNATIVE D

The table and analysis for Alternative D is the same as it is for Alternative B and will not be repeated here. However, factoring in 12,980 acres of lands to be disposed decreases locatable minerals availability, but not quite as much as under Alternative C:

Table IV-46

Potential

	High	Moderate	Low	Total
Available	0	200	0	200
Concern	18,280	860	3300	22,440
Closed	2600	2480	9450	14,530
Total	20,880	3540	12,750	37,170

The favorability index for this alternative is 3.85, or 36.6%.

ALTERNATIVE E

The table and analysis is the same as Alternative D and will not be repeated here. However, factoring in an additional 2960 acres disposal would decrease availability:

Table IV-47

Potential

	High	Moderate	Low	Total
Available	0	200	0	200
Concern	18,280	860	340	19,480
Closed	2600	2480	12,410	17,490
Total	20,880	3540	12,750	37,170

The favorability index for this alternative is 3.77 or 34.8%. The transfer of land to the USFS under this alternative could further affect this rating due to that agency's differing regulatory authority for surface management of mining claims. USFS regulations usually require a more involved permitting process with increased agency control.

Salable Minerals

Unlike locatable minerals, the authorized officer has complete control and discretion on whether or not to allow salable mineral (mineral materials) production on vacant public lands. Consequently, there is a much greater potential impact to salable minerals availability due to land management decisions being considered in this plan.

Disposal of public land under Section 203 FLPMA would not materially affect salable minerals availability nor would the management category likely be changed. Surface owners may be able to somewhat delay or limit production, but cannot prevent it. However, disposal under the Recreation and Public Purposes Act could lead the land manager to change the management category to one more restrictive. This would depend on the compatibility of mineral material production with the patentee's existing or planned land use.

Designation of land as a concern area because of important wildlife habitat may decrease salable mineral availability due to stipulations such a seasonal cessation of operations or avoidance of crucial habitat areas. Severe conflicts with wildlife values or any irresolvable conflict with a federally designated threatened or endangered species would result in the rejection of a material sales application and resultant loss of the mineral.

Existence of cultural or paleontologic resources may also result in a delay or loss of salable minerals production. If adverse impacts to such resources cannot be mitigated through stipulations in a material sales permit, then the permit would not be issued, resulting in a loss of the mineral resource.

Existence of unpatented mining claims on public land precludes the sale of mineral materials. This would effectively move large acreages of land, especially within Management Zones 6 and 8, from an open or concern area to closed. Because of the difficulties involved in compiling a complete and accurate inventory that would be continuously subject to change this effect is not included in the analysis of salable minerals availability.

Designation of lands as open represents the maximum availability of lands for material sales permit applications. Concern area designation does not decrease availability per se, but stipulations contained in a permit may result in delay or loss of mineral material production to protect identified resource values. Management of salable mineral operations is governed by federal regulations (43 CFR 3600). A policy statement therein requires the disposal of mineral material resources to be at fair market value while ensuring that adequate measures are taken to protect the environment and minimize damage to public health and safety. Additionally, there is a prohibition against disposal of mineral materials where the aggregate damage to the public lands would exceed the benefits of disposal, or cause unnecessary and undue degradation. Mining and reclamation plans may be required of an applicant to accomplish this purpose. All these have the potential effect of delaying, reducing, or totally prohibiting salable mineral production. A closed designation indicates that all permit applications for lands so designated will be rejected, therefore, resulting in total loss of salable minerals availability.

Analysis of Subsurface Estate

Access restrictions and salable mineral potential for Management Zones 1 through 10 found in Appendix C are summarized in the following table:

Table IV-48

Potential

	High	Moderate	Low	Total
Open	2890	20,300	82,340	105,530
Concern	49,480	39,210	37,150	125,840
Closed	8080	39,170	34,010	81,260
Total	60,450	98,680	153,500	312,630

A favorability index of 3.39 can be calculated from this tabulation. If all the lands were open (minimum access restrictions) a factor of 5.10 would result. All lands closed (maximum restriction) gives a factor of 1.70. Therefore, the favorability index of 3.39 for current subsurface management represents 49.7% of decision range utilized.

It should be noted that this figure is low because many of the lands closed are acquired subsurface estate from which the BLM has no authority to dispose of salable minerals. Congressional action would be required to grant this authority and is, therefore, beyond the scope of this plan.

Analysis of Public Land

ALTERNATIVE A

Under Alternative A, the following acreages are designated and tabulated according to their potential for salable mineral occurrences.

Table IV-49

Potential

	High	Moderate	Low	Total
Open	320	450	3470	4240
Concern	9980	13,870	480	24,330
Closed	400	1930	6270	8600
Total	10,700	16,250	10,220	37,170

This results in a favorability index of 3.87. An unrestricted favorability index (all lands Open) would be 6.06, a totally restricted (all lands Closed) index would be 2.02. Therefore, Alternative A represents a 45.8% utilization of discretionary land use allocation with regard to salable minerals availability.

ALTERNATIVE B

Under Alternative B, the salable minerals availability table is as follows:

Table IV-50

Potential

	High	Moderate	Low	Total
Open	40	380	3470	3890
Concern	9540	13,930	400	23,870
Closed	1120	1930	6350	9400
Total	10,700	16,240	10,220	37,160

The resultant favorablity index is 3.79, representing a 43.8% utilization of unrestricted decision range. This is only a slight decrease from Alternative A despite the emphasis on protection of resource values.

ALTERNATIVE C

The table and analysis for Alternative C is the same as for Alternative A and will not be repeated. The increased disposal of public land under this alternative may have a slightly larger but presently unmeasurable negative impact on the availability of salable minerals than the other alternatives.

ALTERNATIVE D

The table and analysis for Alternative D is the same as for Alternative B and will not be repeated. Public land disposal may have a greater negative impact than Alternatives A or B but less than Alternative C.

ALTERNATIVE E

The table and analysis for Alternative E is the same as for Alternative B and will not be repeated. Public land transfer to the USFS and DOW may have a greater negative impact than Alternative A, B, or D and similar to C.

Coal

Since the Denver-Raton Mesa Federal Coal Production Region has been cancelled, no Bureau-motion coal lease sales will be conducted within the Northeast Resource Area. Therefore, no alternatives can be formulated based on varying acreages of coal lands to be offered for lease. Since leasing within a cancelled coal production region is by application under federal regulations (43 CFR 3425), suitability determinations must be made on a case-by-case basis as applications are received. At present there are 8 preference right lease applications for which suitability determinations have been made.

A suitability inventory was conducted on the 108,720 acres of federally-owned coal rights within the Denver Basin Known Recoverable Coal Resource Area (KRCRA) before the region was cancelled. This is shown as high potential coal land in the table below. Other lands known or suspected to contain coal outside of the KRCRA were not inventoried and show up as either moderate or low potential and all remain open to coal lease application. Appendix A has a more detailed explanation of how potential was determined.

Only 380 public land acres (Management Units 101, 401, 1001, 1003) contain coal in the Northeast Resource Area, and this is as yet unevaluated by the unsuitability criteria. Therefore, no favorability index can be assigned. In the analysis of subsurface estate for reserved coal, all alternatives are represented by a categorization accomplished through the unsuitability inventory conducted under federal regulations (43 CFR 3461.3-1) during 1981. The designations by potential are as follows:

TABLE IV-51

Potential

	High	Moderate	Low	None	Total
Suitable	97,440	0	0	0	97,440
Open	0	102,910	73,180	0	176,090
Unsuitable	11,600*	0	0	0	11,600
None	0	0	0	314,330	314,330
Total	109,040	102,910	73,180	314,330	599,460

*This figure is exaggerated by the inclusion of 40 acres around buildings, nest sites, floodplains, etc., which do not necesarily require 40 acres be designated unsuitable. Note that suitability findings are reviewed prior to leasing and during mine plan analysis. Both additional and reduced unsuitability may be determined.

This represents a favorability index of 5.47, or 82.3% of management range utilized. This calculation necessarily deletes the acreage currently unevaluated for suitability or lacking in coal resource. The index and percentage figures are low due to the exaggeration of the unavailable acreage. However, it should be noted that the land manager's flexibility in this matter is limited since the application of the unsuitability criteria is required.

Further impacts to coal land availability could occur if coal lease applications are received for any of the open acreage, thus necessitating a suitability determination. Areas determined unsuitable would not be leased, resulting in the loss of the coal resource. The authorized officer may also reject a coal lease application in total or in part if it is determined that leasing would be contrary to the public interest.

Oil and Gas

Categorization of lands for oil and gas leasing and development restrictions was accomplished through the Northeast Resource Area Oil and Gas Umbrella Environmental Assessment and is displayed as Alternative A in Appendices B and C.

Disposal of public land generally does not materially interfere with availability of the reserved mineral estate for oil and gas leasing and exploration.

Existence of cultural resources (as determined by a required site-specific survey) may necessitate a delay or move the location of exploration efforts. Paleontological resources can have the same effect, although a survey is not required in all cases.

Designation of lands for standard stipulations maximizes their availability for oil and gas exploration. Seasonal stipulations prohibit exploration for certain periods of the year, but do not affect production once the well is established. Yearlong is known as the "No Surface Occupancy" stipulation. It causes impacts to the availability of lands so encumbered due to the total prohibition of placing drilling equipment on the lease area. Such lands can only be developed through directional drilling from adjacent areas or through drainage. The open category is known as "case by case review " of applications to determine lease acceptability and stipulations. This category is applied to areas of extremely low potential and suspected critical areas that need more specific field study. Designation of areas as Unsuitable (No Lease) represents complete loss of that acreage for exploration and production as neither directional drilling or drainage can be allowed.

Analysis of Subsurface Estate

For reserved oil and gas, all alternatives are represented by the categorization accomplished through the Oil and Gas Umbrella Environmental Assessment.

Table IV-52

Potential

	High	Moderate	Low	Total
Standard	105,500	81,840	17,170	204,510
Seasonal	39,600	11,230	29,840	80,670
Yearlong	2730	480	1840	5050
Open	6960	160	30,520	37,640
Unsuitable	0	520	480	1000
Total	154,790	94,230	79,850	328,870

The favorability index for this situation is 8.67. Minimum access restrictions (all acres standard stipulations) would rate an index of 9.35, whereas maximum restrictions (all acres unsuitable) would be 2.34. Therefore, the mineral estate designations for all alternatives represents a 90.3% utilization of available decision range. Note that the open acres have not been included in these calculations. Since no determinations have yet been made.

Analysis of Public Land

ALTERNATIVES A and C

Table IV-53

Potential

	High	Moderate	Low	Total
Standard	1260	3000	2040	6300
Seasonal	700	140	2430	3270
Yearlong	7190	280	0	7470
Open	0	0	19,260	19,260
Unsuitable	570	0	300	870
Total	9720	3420	24,030	37,170

The favorability index of 2.87 can be calculated from this table. Minimum restrictions would rate an index of 6.44; maximum, 1.61. The decision range utilized is 26.1%. The increase in acres of land disposed in Alternative C is not expected to affect the availability of the reserved oil and gas.

ALTERNATIVES B, D, and E

These alternatives decrease mineral land availability:

Table IV-54

Potential

	High	Moderate	Low	Total
Standard	1020	3000	1880	5900
Seasonal	590	140	2430	3160
Yearlong	7410	280	0	7690
Open	120	0	19,420	19,540
Unsuitable	570	0	300	870
Total	9710	3420	24,030	37,160

The favorability index for these alternatives is 2.79. With the minimum and maximum values the same as Alternatives A and C, the decision range utilized is 24.4%. This represents only a slight decrease in availability from Alternatives A and C.

AIR QUALITY

The impact of management activities on the air quality of the area is expected to be temporary and minor for all of the alternatives assuming no large surface coal or gravel mines are developed. Because all areas are designated for General air resource management which limits air quality impacts by law, there will be no difference in the impacts expected between the alternatives except for the question of land disposal. Sale of lands may allow private development of those lands and create more air pollution in Alternatives C, D, and E than in Alternatives A or B.

Increased access acquisition and subsequent road construction would lead to localized minor increases in total suspended particulates (TSP) and exhaust emissions. Timber and firewood harvesting will also have a similar effect due mostly to vehicle traffic. Secondary effects may include greater combustion particulate concentrations due to increased residential wood-burning. Leasing of lands for agricultural use would lead to localized temporary TSP increases due to local winds. Prescribed burning causes significant temporary impacts to local air quality but is only done when dispersion conditions are good. Increases in developed recreation would lead to localized impacts due to traffic. Mineral development causes varying degrees of air quality degradation depending on the type and size of the project. Large coal and gravel mines can have significant impacts on air quality due to the large area of surface disturbance and on-site mineral handling and processing. These impacts may also be long-term, lasting up to 30 years or more. Smaller operations and most oil and gas development have only minor impacts on air quality. An oil or gas well "blowout" (uncontrolled flow) can have a significant and potentially hazardous impact on local air quality due to release of carbon dioxide, hydrogen sulfide, or natural gas.

In summary, surface disturbance, vegetation removal, and vehicle use can affect air quality. Sufficient quantifiable differences in impacts do not exist to identify one alternative as preferable to another relative to air quality.

ROADS AND TRAILS

There would be no significant affect on existing roads or trails by any alternative. The amount of road construction can be compared for alternatives by reviewing the Access Section of this Chapter.

PESTS

Timber management will take into consideration forest pest problems. Harvesting will be designed to remove or reduce the effects of forest pests and diseased trees will take priority over healthy trees for removal. Chapter II describes the priorities for pest control and the actions to prevent forest pest problems and to protect the forest.

Legal and physical access can be a limiting factor in the pest control program, for obtaining access is a lengthy process and an epidemic may develop before access is obtained. Then the operation becomes one of salvage.

Allowing pests to spread unchecked can reduce the scenic quality of an area, so pest management may be allowed in scenic areas to reduce the visual impact of an unchecked epidemic.

USE AUTHORIZATIONS

Use authorizations would be limited to the retained lands and normal processing. Therefore, the more land retained the more areas open to application.

PUBLIC INFORMATION

Increased activity or resource development would require increased public information. Alternatives B, C, and D would require much the same amount and type of public information, i.e. slight increase from present to respond to public requests. Alternative E would transfer responsibility to the USFS.

UNAUTHORIZED USE

Processing and rectifying cases is accomplished as possible. Therefore, all alternatives would be essentially the same, although disposed land would not need to be checked for unauthorized use after disposal.

ECONOMICS

The annual differences between alternatives is small related to local, regional, and national values. Regardless of the alternative, BLM's effect on the economy is negligible.

Combining those expenditures and values from the resources where there were measurable differences (forestry, hunting) between alternatives the following results are obtained. This does not include wildlife values lost if specific review areas are sold.

Change in local and regional annual direct expenditures from Alternative A.

B. $ 0
C. -$2740
D. -$ 939
E. -$ 939

Change in annual National Values from Alternative A.

B. $ 0
C. -$4564
D. -$2502
E. -$2502

This analysis does not include resources where there are no measureable differences between alternatives, (e.g. coal), where resource values (e.g. air quality) or resource quantities (e.g. recreation) are not known. Nor does it include BLM management costs and benefits such that disposal benefits can be measured directly. The rest of this section discusses these benefits in more detail. The specific detailed analysis is available at the Canon City District Office.

Local and Regional Impacts

There are several key resources whose economic effects cannot be measured given present data constraints. The potential economic impacts are insignificant between alternatives, and are insignificant (with the possible exception of mineral development) in relation to the local economies. A comparison of the differences of these resources by alternative is in the corresponding section of the environmental consequences (Ch. IV). The potential impacts economically are described below:

1) Air Quality - Those actions which create a lowering of air quality may result in higher health and maintenance (eg. paint) costs. 2) Paleontologic, Cultural and Historic Resources - Those actions which reduce the availability of these resources to public observation may reduce tourism in a given area. In turn, this may reduce local employment and income. 3) Water Quality and Quantity - Actions which reduce water quality may result in higher clean-up costs if associated with municipal water systems. Lower water quality may reduce local income related to expenditures of fishermen if it reduces local fisheries. Also, water quality deterioration related to mining may reduce agriculture profitability if the deterioration is great enough to make the water unusable with different crop types. In addition, a reduction of water quantity may have the same impacts, especially on agriculture. 4) Soil Erosion - Soil erosion may cause a reduction in productivity of agriculture. Similarly, reduced vegetation may result in lesser forage for cattle and wildlife, reducing herd size. This could reduce rancher profits or profits of those selling to hunters. 5) Visual Resources - Any local economic impact would have to result from decreased tourism and property values. 6) Open Space - Local impacts are primarily related to increased property values of land near the open space. 7) Recreation - Increased tourist and recreation expenditures result when more land is utilized in this fashion. 8) Specific Mineral and Oil and Gas - Direct employment results from the utilization of mineral resources. Employment results from the mine, industries that make mining equipment, industries utilizing mining materials, and sectors selling to those employed. These impacts may be significant, especially if the mining operation is not near population centers.

It is emphasized that with the possible exception of mineral impacts, the total BLM economic impact from these resources is expected to be insignificant regardless of alternative.

The following estimated impacts may occur regardless of alternative.

1. Coal leasing: Estimates of coal leasing are the same for each alternative. That is, approximately 200 acres may be mined per year. Utilizing expected production rates from the Station Creek area, this could constitute up to 5 million tons per year.

Employment at coal mines vary considerably with several different factors; primarily production rate, method (strip or underground), and geologic formation. The first two are addressed here.

The coal mining method is expected to be strip mining. If underground mining methods are used the quantity of employees in a mine producing over 1,000,000 tons will be from two to three times the required surface mining employment for the same output. Average production ranges for surface mines are as follows:

Table IV-54

Mine Production Tonnage Per Year*	Tonnage Production Per Miner Year
0 - 30,000	2,096
30,000 - 100,000	3,356
101,000 - 1,000,000	7,411
1,000,001 -	14,651

* Mineral information regarding value mined per employee was derived from information from the Colorado Department of Natural Resources.

Note that this is average production, not maximum. Within each mine size, productivity can vary greatly depending on geologic formation, mine stage, equipment types and coal market demand. Therefore, a mine at peak production could exceed the above worker productivity figures.

At the time of this writing there are no up-to-date models specific to the planning units which would be used to measure total employment, business sales, and income changes brought about by coal development. However, the following tentative estimates have been made based on revisions of Guidelines V, Regional Multipliers January 1977, an earlier input-output (I-O) study by the Bureau of Economic Analysis; The Upper Colorado Mainstem, an I-O study contracted by the BLM Colorado State Office; and Colorado State employment/gross value data.

The entire region, has an estimated business multiplier of 2.7 for coal. This multiplier times the dollar value of coal exported shows the average cumulative impact of a change in the level of business activity in the industry. Thus, the impact of the coal sales includes not only the value of the coal, but the increased sales made by suppliers of the coal industry, and the increased purchases made by households and services who have benefitted from these sales.

Additionally, an increase in business sales will cause an increase in income within the region assuming the coal is exported. If the coal is used within the region instead of imported fuel, the regional gains would be at least equal to the costs of the previously utilized services times a multiplier. As the income increases, it changes hands through households and creates further spending and income. Utilizing the Bureau of Economic Analysis income to gross sales ratio, an estimated $.85 is added to regional income for each $1.00 of coal exported.

Just as an increase in business sales and income results from expanded coal activity, so does an increase in employment occur. Utilizing figures from the Upper Mainstem of the Colorado River, total employment for $100,000 of coal sales would be 2.78. Expected multiplier differences can be attributed partially to the area, date of the survey, and differences in mining types. Most importantly, differences in support services, such as the headquarters have an impact, and tend to distort the average figures higher from what a marginal increase would be.

Applying employment estimates according to mine size the following estimates are made:

Table IV-55

Mine Size (Annual Tonnage)	Minimum Regional Employment Generated by $1,000,000 in Coal Sales*
30,001 - 100,000	26.57
100,001 - 1,000,000	12.03
1,000,001 -	6.08

* Average productivity for different mine sizes times the multiplier for Colorado Mainstem adjusted by regional sale differences. Assumes a value of $20 per ton of coal.

If the 200 acre/year mine is developed it would be expected to have a production rate of approximately 5,000,000 tons per year. The direct and indirect employment generated is expected to be between 300-450 people. The validity of these estimates are a first approximation. In the rural areas such as east Elbert and Lincoln counties the estimates are considered high because most linkages to the mining industry and many areas where miners will shop (e.g. Denver, Colorado Springs) are located outside these counties. Near urban areas this multiplier is understated since most effects will be captured in the area, and the mineral industry has extensive linkages.

2. Oil and Gas Leasing: Additional oil and gas activities should not lead to significant population changes in the NERA. Extrapolating from the Upper Colorado mainstem model in Northwest Colorado, it is estimated that the urban Front Range would have greater than 4 additional jobs created for every $1,000,000 of oil and gas produced. This includes the oil and gas employees, company operations, and other employment from expenditures in the area. In contrast, oil and gas activity on the rural Eastern Plains would probably generate less than four jobs per $1,000,000 locally (although it would be greater if spinoff jobs in urban areas were included). In either case anticipated effects are the same under each alternative and are expected to be minimal.

3. Salable and Locatable Minerals: In 1980 data shows that there was slightly greater than 1.6 employees per $76,783 of salable mineral value and 1.2 for $159,151 of locatable mineral value in the NERA. This includes direct and indirect employment. The locatable figure is biased upward due to a large molybedenum mine, without which the figure would be closer to $15,000 per 1.2 employees reflecting the large percentage of small operations for gold and silver. Regardless of alternative, the leasing of these minerals is expected to have an insignificant local effect.

Measurable resources which show some local and regional differences by alternative are:

1. Fuelwood: Value in terms of energy saved is $2755 for Alternative A and B; $1667.50 for Alternative C; and $1863.25 for Alternative D and E. In each case value is measured from the energy saved of heating from fireplaces. It is assumed that energy payments go outside the region and this is money saved within the region. Regardless of which alternative is selected the regional impact is negligible and there are little local impacts since the quantity of BLM firewood will not affect the local price structure.

2. Grazing: In all cases the current grazing levels are expected to continue. Therefore the BLM impact on the local economy is the same as that indicated in the affected environment. While areas open to lease would change, judging from past behavior any overall difference would be minimal. Where land is disposed of continued livestock use is expected.

3. Wildlife: Inventories of wildlife on all BLM administered lands are not complete at this time. Therefore a baseline from which to compare is lacking. Analysis of units which may be put to different use causing changes in wildlife habitat were examined such that the alternatives can be compared. Alternative A (current management) is the baseline alternative in this respect and all alternatives are being compared to that. Only hunting values for antelope, deer, elk, and bighorn sheep are included in this analysis.

Table IV-56

Change In Variable Local Expenditures * by Alternative

	A	B	C	D	E
Deer	Baseline	0	- $ 667	- $48	-$48
Elk	Baseline	0	- $1587	0	0
Total	Baseline	0	- $1652	- $48	-$48

* Excludes multiplier. Estimated by regression of variable hunter expenditures on population and hunters, in the region divided by herd. Assumes in-state and out-of-state hunter ratio is the same as the state ratio. Estimates are based on 1981 data from "An Input-Output Analysis of Sportsman Expenditures in Colorado" by John R. McKean.

A large area is designated for specific review under alternatives C, D, and E. If all these acres are sold a quantity of animals will be lost. The following are the estimated variable local expenditures lost if all specific review areas are sold and the habitat is lost:

Table IV-57

	Low	Medium	High
Deer	$ 9627	$11,248	$12,868
Elk	$ 2247	$ 2710	$ 3173
Antelope	$ 9	$ 9	$ 9
*Sheep	$ 1137	$ 1241	$ 1345
Total	$13,020	$15,208	$17,395

* Using comparative expenditure data from a 1973 DOW contracted survey.
In all cases the difference in local and regional expenditures between alternatives will be insignificant to the local economies.

National Values

National values are defined as the net economic gain from an activity. For instance, the value of additional cattle minus the cost of production would represent net economic gain. Activities such as recreation have no market prices, therefore, the net gain is what the recreator is willing to pay over his actual costs to participate in the activity. Net gains are portrayed on an annual basis.

Some resource values cannot be measured by this method for any one of the following three reasons: 1) the economic data is not available; 2) the economic data is too variable given our current knowledge of the resource; and 3) the resource data is not available. In all cases the values are expected to be insignificant in regard to the total and in regard to the differences between alternatives. The following are the key unmeasured elements:

1) Air Quality - Those actions which create a lowering of air quality may result in higher health and maintenance costs, as well as a lower perceived quality of life. Therefore, the national values may be lower or even negative, although the perceived value of the entrepenuer (e.g. miner) will not take this into account. 2) Paleontological, Cultural, and Historical Resources - Those actions which reduce the availability of these resources to public observation reduce the net benefits to the consumers of those activities. 3) Water Quality and Quantity - Actions which reduce water quality incur higher costs and preclude some activities (e.g. agriculture, fisheries) reducing the net value to producers and consumers of these uses. A reduction in water quantity reduces these activities benefits as well.
The net national benefits of the actions which reduce water quality or quantity are reduced by the net losses to these other activities. 4) Soil erosion reduces the net benefits of some crop production, and those benefits accrued by hunters because of increased wildlife. 5) Visual Resources and Open Space - Any degradation reduces the net benefit of those who enjoy that resource. 6) Recreation - An increase in recreational use is a net benefit to the consumers who are able to participate. Additionally, users of other areas which experience less congested use benefit. 7) Mineral or Oil and Gas-Usage increases national value by the sale price minus extraction costs (which includes costs to other uses precluded).

It is emphasized that the total BLM impact on national values is expected to be insignificant regardless of alternative.

Resources which are measureable and the estimates of annual value made are as follows:

1. Fuelwood. The value of a cord of fuelwood is estimated at $20 based on current users responses. Therefore, annually Alternative A = $7600, Alternative B = $7600, Alternative C = $4600; Alternative D and E = $5140. This does not include fuelwood currently considered unavailable which technological change could make useable in the future.

2. Grazing. Actively grazed lands are expected to remain the same regardless of alternative. Using the average private leasing rate the annual value of $8904.40 is derived.

3. Wildlife. Actual estimates of wildlife on BLM administered lands are not available. Wildlife values were derived from data obtained from questionaires used in McKeans "An Input-Output Analysis of Sportsman Expenditures in Colorado". Analysis of hunting values as they differ between alternatives was done by limiting the scope of per annual estimates to only those tracts where differences between alternatives exist. The results are as follows:

Table IV-58

Annual Hunter Value of Wildlife by Alternative

	A	B	C	D	E
Deer	Baseline	0	- $ 593	- $42	-$42
Elk	Baseline	0	- $ 971	$ 0	$ 0
Total	Baseline	0	- $1564	- $42	-$42

A large area requires specific review under Alternatives C, D, and E. If all these acres are sold a quantity of animals will be lost.

The following are the estimated annual national values that are lost if all the specific review areas are sold and the habitat is lost:

Table IV-59

	Low	Medium	High
Deer	$ 8551	$ 9990	$11,429
Elk	$ 2063	$ 2488	$ 2913
Sheep	$ 8995	$ 9813	$10,631
Antelope	$ 17	$ 17	$ 17
Total	$19,626	$22,308	$24,990

BLM Management Costs

The effect on management efficiency is improved with greater transfer and disposal since the more costly and least beneficial tracts of public land become the responsibility of more appropriate entities, and therfore more efficient managers. Alternative B would be slightly more costly in both the short and long term than Alternative A but would also increase benefits derived from the public lands. Alternative C would requie a small increase in funding in the short term and would ultimately reduce costs slightly but the benefits would also be reduced. Alternative D would require increased funding but not as great as Alternative A or B and would provide increased benefits. Alternative E would slightly reduce the short term funding and greatly reduce the long term funding needs but would also reduce benefits somewhat.

The following chart presents the expected percentage changes in BLM management costs by alternative. The base from which these figures are estimated is the cost of past management, recently ranging from $225,000 to $300,000 per year. The estimates are given in percentage change from the base because specific projects are not identified in the plan.

	Alternative				
	A	B	C	D	E
1st 5 Years	+17%	+18%	+7%	+15%	- 6%
After 5 Years	+17%	+18%	-3%	+15%	-67%

The following assumptions were utilized to derive the estimates:

1. Costs within the first 5 years are assumed to include the majority of the work associated with land disposal.

2. Fixed costs were identified as the building and public functions except in Alternative E where the Forest Service would assume most of these responsibilities.

3. Total variable costs were assumed to be proportional to the estimated changes in work months.

4. The base cost range differs from Alternative A because several changes from past management have recently become necessary, therefore present management (Alternative A) is somewhat more costly.

5. Alternative E assumed the need to retain 3 specialists in the Colorado State Office to deal with the subsurface estate. The savings in BLM costs under this alternative are costs which may be incurred by other agencies which will manage the land.

SOCIOLOGY

Little population change will result from any of the land use allocation decisions with the possible exception of coal leasing. If coal production occurs as is equally possible under each alternative, the estimated demographic impacts are described in the economic section. A specific social analysis will be made on a case-by-case basis at the time of lease application. It should be noted that coal mining would be expected to occur in the Known Recoverable Coal Resource Areas (KRCRA). If development occurs in those portions of the KRCRA close to Denver or Colorado Springs there should be minimal infrastructure or social impacts. If development occurs in the rural eastern fringes of the KRCRA, infrastructure demands and social structure could be affected. These areas are unaccustomed to rapid growth such that infrastructure (e.g. schools, police) planning and funding may be inadequate. Additionally, the wage differential between mining jobs and local industry (primarily agriculture) could cause temporary displacement and a rise in area wages. Also, conflicts may result from the newcomers, especially in the construction phase. Construction workers moving closer to the site will create demands on local rental housing and recreational facilities which will compete with the demands and uses of local residents. Construction workers tend to be younger than a rural area's population, and not as interested in the community since they will be there for only a short time period. This would be considered a negative impact by the small town or rural community where most people know each other.

No other activity will result in potentially significant impacts to any portion of the region's social organization or well being. Rather, the social implications of BLM's actions in the Northeast Resource Area will be site specific and generally confined to a particular type of user group. Any decision will usually produce trade-off social advantages for some persons or groups and social disadvantages for others. For instance, a decision involving mining may help companies and the local economy, but might damage wildlife habitat which would negatively affect hunters. The differing social impact between alternatives is minimal. The following identifies some of the affected groups when alternatives differ.

1. The study (see Affected Environment) identified firewood harvesting as a need in northeastern Colorado. Alternatives A and B provid the greater opportunity for firewood harvesting than D and E, while Alternative C has the least. The maximum difference (between A and C) will affect approximately 75 families by reducing their consumption 2 cords per year.

2. Disposal could reduce opportunities in recreation by limiting access and reducing wildlife habitat. Recreation potential was an important element to those interviewed (see Affected Environment). Alternatives A and B would limit recreational opportunity (primarily hunting and wildlife viewing) the least, followed by D,E, and C. The impact on user groups between alternatives should be extremely small due to the current limited recreational use of the lands considered for disposal.

3. Disposal will impact some ranchers currently holding leases. It could result in the purchase of the land by the rancher, or the discontinuance of the lease if purchased by another party. In some of these cases it would be a hardship to the rancher, while being a benefit to the new purchaser and the federal treasury. The quantity of those affected ranges from 12 in Alternative B, to 14 in Alternatives A, D, E, to 21 in Alternative C.

4. Scenic quality and open space are a concern to many people in the NERA. Retaining public lands which fulfill this objective is primarily done in Alternatives B and D. This benefits those in the surrounding area who have expressed a preference for open space as well as recreationists who would use it. Those who wish to purchase and develop this land as well as those who would utilize the land directly (e.g. suburban homes) are negatively impacted.

CUMULATIVE ANALYSIS OF ALTERNATIVES

A. Continuation of Current Management (No Action Alternative)

Approximately 4700 acres would be disposed of to non-public entities and the BLM would continue to manage approximately 32,350 acres under the multiple use concept as per the Federal Land Policy and Management Act of 1976 (FLPMA). An additional 619,700 acres of subsurface mineral estate would be managed for mineral production in cooperation with the surface owners.

Access to public lands would continue at the present level, legal public access to approximately 7450 acres.

Wildlife habitat maintenance would continue on approximately 31,820 acres, and 26,210 acres of excellent and good potential habitat would be under federal or DOW control.

The forested land in the front range (approximately 17,640 acres) would continue to have limited harvest permitted (380 cords per year)

Water quality, floodplains, and water sources would be maintained. Soil erosion would be minimal.

Protection of valuable open space would not be pursued and 80 acres would be disposed of to non-public entities. A projected 2330 acres would likely have their scenic quality reduced slightly.

Recreational opportunities will remain nearly the same except on approximately 9180 acres where a loss of semi-primitive character would change to roaded natural.

Minerals development would continue under the highest alternative favorability for locatable, salable, oil and gas, and coal.

The largest amount of vegetation disturbance would occur under this alternative.

Expected management costs would increase 17% from previous years. This Cost is relatively equal to Alternatives B and D but higher than C or E.

B. Moderate BLM Retention and Increased Response to Issues

Approximately 3690 acres would be disposed of to non-public entities and 14,770 acres turned over to other appropriate public agencies. The BLM would increase multiple use mangement (FLPMA) on approximately 21,570 acres. Subsurface mineral responsibility would increase to approximately 620,110 acres in cooperation with the surface owners.

Access to public lands would be pursued to valuable tracts. Approximately 12,420 acres would become accessible to the public.

Wildlife habitat improvement would take place on 32,020 acres, and 25,740 acres of excellent and good potential habitat will be under federal or DOW control.

Timber and fuelwood management and harvesting would stay the same as the current situation. Approximately 17,640 acres would be available for harvesting and 380 cords per year would be sold.

Water quality, floodplains, and water sources would be maintained as under the current management alternative. Soil erosion would be the same as current management also.

Much of the valuable open space tracts in the front range would be protected (15,250 acres). Approximately 1030 valuable acres would be disposed of to non-public entities. Some 2250 acres would likely have their scenic quality reduced slightly.

Recreational opportunities will be slightly changed in character. Approximately 1640 acres of semi-primitive type land will be altered to roaded natural and 4590 acres of roaded natural character will become rural in character.

Minerals development would continue under high favorability ratings for locatable minerals and coal. Salable, and oil and gas favorability for development would decrease by about 2 percent from current management.

Vegetative disturbance will probably be only slightly less than under current management.

Expected management costs would increase 18% from previous years. This cost is relatively equal to Alternatives A and D but higher than C or E.

C. Limited BLM Retention and Response to Issues

Approximately 9620 acres would be transferred to other public agencies, 9130 acres would be put up for general sale, and 17,810 acres would, after specific review, be retained, transferred, or disposed of as determined appropriate. Only 3480 acres would remain administered by the BLM and most of that associated with Riverside Reservoir. Subsurface mineral estate acres would rise to 630,890.

Access to public lands would not be pursued and 240 acres with access would be disposed of leaving 7210 acres with legal access.

Approximately 23,480 acres of important wildlife habitat including other public agency disposal lands and specific review lands would be maintained, and 18,840 acres of excellent and good potential habitat will be under federal or DOW control.

The acres available for timber and fuelwood harvesting would be reduced to 13,780. The annual harvest would be reduced to 230 cords.

Water quality concern areas and floodplains would be partly disposed of, increasing the risk of degradation. All water sources would be protected. Soil erosion would be slightly reduced due to a small reduction in vegetative disturbance.

Valuable open space tracts would not be specifically protected and 1800 acres would be disposed of to non-public entities. The greatest degradation of scenic quality would occur under this alternative. Approximately 930 acres of high quality and 4180 acres of somewhat less quality would be degraded.

Recreational opportunities will be greatly reduced due to disposal and character changes. Approximately 8860 acres of semi-primitive character would change to roaded natural or rural and 5650 acres of roaded natural character would change to rural.

Minerals development would be less favorable for locatable minerals than any other alternative. Salable, coal, and oil and gas development favorability would rate equal to current management (highest of alternatives).

Vegetative disturbance would be the lowest of any alternative.

Expected management costs for the first 5 years would increase 7% from previous years, thereafter it would decrease by 3%. This would result in a cost savings for the BLM over Alternatives A, B, and D only.

D. Limited BLM Retention and Increased Response to Issues

Approximately 10,810 acres would be transferred to other public agencies, 7550 acres would be put up for sale, and 16,700 acres would, after specific review, be retained, transferred, or disposed of as determined appropriate. Approximately 4980 acres would be retained by the BLM. Subsurface mineral management acres would increase to 628,200.

Access to public lands would increase to 8340 acres even with disposal of 80 acres with existing access.

BLM and other public agency lands where wildlife habitat would be maintained or improved total 26,580 acres, and 21,380 acres of excellent and good potential habitat will be under federal or DOW control.

Timber and fuelwood harvesting would be reduced to 257 cords per year from approximately 17,140 acres.

Water quality concern areas and floodplains would be partly disposed of, increasing the risk of degradation. All water sources would be protected. Soil erosion would be only slightly higher than Alternative C, but still quite low.

Valuable open space would be protected on 15,840 acres, but 440 valuable acres would be disposed of. Approximately 2570 acres would have their scenic quality reduced slightly.

Recreational opportunities would be similar to Alternative B (i.e. relatively little change).

Minerals development favorability would be reduced by 5% for locatable minerals and 2% for oil and gas. Salable and Coal would remain the same.

Vegetative disturbance would be just slightly higher than under Alternative C.

Expected management costs would increase 15% from previous years. This cost is relatively equal to Alternatives A and B but higher than C or E.

E. No BLM Retention (Preferred Alternative)

All surface lands with public value would be transferred or disposed of to public agencies. Non-public value lands would be disposed of to non-public entities.

The USFS would gain responsibility of 23,640 acres in the front range and the National Park Service 120 near Estes Park. State and local governments would acquire 8720 acres. General sale of the remaining 7550 acres would be initiated. The subsurface mineral estate under BLM administration would increase to 631,270 acres. Since other public agencies would be controlling management of all the lands that under Alternative D where to be retained or reviewed by the BLM little actual difference in impacts can be expected.

The USFS management might differ with regard to access (less would probably be pursued), open space (not specifically protected), and locatable minerals (their regulations are slightly less favorable for development). In general no significant management differences from Alternative D expected.

Expected management costs for the first 5 years would increase 6% from previous years, thereafter it would decrese by 67%. This would result in a significant cost savings for the BLM particularly over the long term relative to all other alternatives.

UNAVOIDABLE ADVERSE IMPACTS

No unavoidable impacts are expected to be regionally significant since mitigative measures (standard and special stipulations, and requirements for site specific reviews) will be included as a part of all alternative implementation. The two actions proposed that could possibly be considered as being locally significant are land sales and coal strip mining. Still, once all mitigative measures are considered the potential impacts would be minimized. The possibility of coal mining actually occurring is controlled by industry and therefore is the same under all alternatives. The amount of land offered for sale is determined by the BLM and therefore varies (from 3,930 acres to 26,940 acres) between alternatives. The amount of acres that would be sold to non public entities are as follows:

A. 3,930 acres
B. 3,690 acres
C. 9,130 - 26,940 acres
D. 7,550 - 24,250 acres
E. 7,550 acres

The ultimate unavoidable adverse impacts of these sales is the loss of 1) payments in lieu of taxes to counties, 2) public uses such as recreation and firewood cutting, and 3) federal treasury reciepts for authorized use.

SHORT TERM USE VERSUS LONG TERM PRODUCTIVITY

Few activities may be sacrificing long term productivity for short term use. First, if and where land sales result in residential development the long term productivity of natural resources is being precluded. Where mineral extraction occurs the benefits occur exclusively in the short term. Short term uses of vegetation (grazing, forestry, and wildlife) are managed under all alternatives to improve or at least maintain the long term productivity of vegetation. Directly related, the long term productivity of the soil resource is protected. Soil disturbing activities necessarily increase both risk and actual soil loss (erosion). All these activities are specifically designed and reviewed to minimize the loss or possibly to eliminate the risk.

IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

The changes in land status are considered irreversible since it is unlikely they would revert to a federal agency particularly the BLM.

Table IV-60

Public Land Status by Alternative

	A	B	C	D	E
BLM	32,350	21,570	3470	4970	0
USFS	2860	13,350	2860	5040	23,640
NPS	120	0	0	120	120
State	0	1420	4310	3750	6820
County	0	0	2450	1900	1900
Private	770	1230	0	1480	1480
General	3930	2460	9130	6070	6070
Specific Review	0	0	17,810	16,700	0
TOTAL	40,030	40,030	40,030	40,030	40,030

The disposal and potential residential development would be an irreversible and irretrievable commitment of natural resources except minerals since they are retained. The use and unrecoverability of minerals is also an irreversible and irretrievable commitment of minerals (although some are recyclable). Soil erosion is an irreversible and irretrievable loss of the basic vegetative substrate. Changes of Recreation Opportunity and Visual Resource Management classes toward the facility, altered, or greater man influenced character is generally an irreversible and irretrievable commitment.

A thorough examination is the best method of reviewing the impacts of each alternative. See Chapter IV and Comparison Chart in Chapter II for complete details.

NET ENERGY ANALYSIS

An energy analysis was not performed for this environmental impact statement because no major actions affecting specific sites are being proposed. A site-specific energy analysis will be included in the environmental document prepared for any major site specific actions. A meaningful net energy analysis requires that a specific action be analyzed and some preliminary engineering data be availalbe.

CHAPTER V

CONSULTATION AND COORDINATION

This Resource Management Plan and Environmental Impact Statement document was prepared by a team of specialists with expertise in numerous fields. Table V-1 lists the individuals, their titles, and responsibilities.

Table V-1

Interdisciplinary Team Members

Project Manager - - - -	Frank Young Northeast Resource Area Manager BS-Forestry, 18 Years of Experience
Team Leader - - - - - -	David Hallock Natural Resource Specialist BS-Forestry, 9 Years of Experience
Technical Coordinator -	Richard Watson Geologist BS- Geology, 7 Years of Experience
Technical Coordinator -	Susan Taylor Natural Resource Specialist BS-Wildlife, 8 Years of Experience
Technical Coordinator -	Gary Rutherford Economist BS-History, MS-Urban Planning, MS-Agricultural Economics, 5 Years of Experience
Clerical and Typing - -	Elner Rush Clerk Typist for District Office College Business, 16 Years of Experience
	Carolyn Clarke Area Clerk High School, 16 Years of Experience
	Sharon Hannah Clerk Typist for District Office College Business, 3 Years of Experience
Team Specialists - - - -	Bob Addison Soil Scientist BS-Agronomy, 12 Years of Experience
	Scott Archer Air Quality Specialist BS-Environmental Science and Chemistry 7 Years of Experience
	Fredric J. Athearn Historian BA, MA, and Ph.D History, 14 Years of Experience
	John Beardsley Archaeologist BS-Anthropology, 8 Years of Experience
	Mary Carl Forester BS-Forestry, 5 Years of Experience
	Ron Dorn Engineer BS-Engineering, 28 Years of Experience
	Harold May Fire Control Coordinator High School, 10 Years of Experience
	Jim Perry Forester BS-Forestry Management, 5 Years of Experience
	Don Prichard Fisheries Biologist BS-Fisheries, 12 Years of Experience
	Mark Pyle Engineering Technician BS-Civil Engineering, 8 Years of Experience
	Barbara Schmalz Sociologist BS-History/Sociology, MA-Sociology 11 Years of Experience
	Bill Schneider Recreation Planner BA-Geology, MS-Recreation 17 Years of Experience

Team Specialists Cont' - Vern Stahl
Realty Specialist
BS-Forest/Range Management
12 Years of Experience

Sue Taylor
Natural Resource Specialist
BS-Wildlife, 8 Years of Experience

Richard Watson
Geologist
BS-Geology, 7 Years of Experience

Howard Wertsbaugh
Hydrologist
BS-Watershed Management
19 Years of Experience

Ernie Wesswick
Soil Scientist
BS-Agronomy, 28 Years of Experience

Over the last 3 years these team members have consulted and coordinated with many individuals, organizations, and government agencies that make up the BLM's "public". Table V-2 is a partial list.

Table V-2

Public Participation

Individuals - Approximately 300 persons including all surface owners over Known Recoverable Coal Resource Areas.

Organizations - Energy Companies
Conservation Associations
Mineral Companies
Professional Societies
Wildlife Associations
Sportsmen Associations
Livestock Associations
Irrigation Companies
Recreational Associations
Guides and Outfitter Companies
Youth Associations
Mineral Associations
Cultural Associations
Public Service Companies

Government Agencies -

Federal - Department of Agriculture, Soil Conservation Service
U.S. Forest Service

Department of Interior, Fish and Wildlife Service
Minerals Management Service
National Park Service
Office of Surface Mining
U.S. Geological Survey
Bureau of Reclamation

Department of Army
Environmental Protection Agency
Department of Transportation

State - Office of the Governor
Board of Land Commissioners
Division of Planning, State Clearinghouse
Division of Wildlife
Division of Parks and Outdoor Recreation
Department of Health
Department of Highways
Division of Mines
Division of Water Resources
Geological Survey
Forest Service
Soil Conservation
Universities
Preservation Office
Division of Local Affairs

Local - Adams County
Arapahoe County
City of Arvada
Boulder County
City of Brighton
City of Broomfield
Cheyenne County
Clear Creek County
City of Colorado Springs
City of Denver
Douglas County
El Paso County
Elbert County
City of Englewood
City of Estes Park
Gilpin County
City of Golden
Jefferson County
Kit Carson County
Larimer County
Lincoln County
City of Littleton
Logan County
Morgan County
City of Longmont
City of Northglenn
Park County
Phillips County
Sedgwick County
Washington County
City of Thornton
Weld County
Yuma County
Denver Regional Council of Governments (COG)
Larimer Weld COG
Pikes Peak COG

In addition to informal contacts between the team and these publics, formal organized participation was solicited. This participation was solicited through use of a mailing list containing approximately 800 addresses, Federal Register notices, and media news releases. Table V-3 is a schedule of the public participations activities.

Table V-3

Public Participation Activities

November, 1980	Federal Register Notice that the plan was beginning. Also, notice made direct to the Colorado State Clearinghouse.
February, 1981	Informal contacts identified issues.
March, 1980	Publish and distribute newsletter with response form announcing 9 public meetings. Federal Register notice made, Media notified.
April, 1981	9 Public meetings, and a meeting with state agencies identified issues.
April 29, 1981	Coal Inventory meeting with US Geological Survey and Office of Surface Mining.
May 22, 1981	Issue identification period closed.
May, 1981	District Advisory Council reviewed issues and commented.
June 11, 1981	Regional Coal Team meeting, decision was made to cancel the Denver-Raton Mesa Federal Coal Production Region, effective May 2, 1982.
October, 1981	Publish and distribute newsletter with issues and planning criteria for comment.
Nov. 19, 1981	District Advisory Council comment on criteria.
Nov. 24, 1981	Comment period closed.
January, 1982	Surface owner consultation via letter with response form.
May, 1982	Informal contacts concerning inventory data and interpretation.
March, 1983	Publish and distribute newsletter announcing 6 workshops on alternative formulation. Federal Register notice made and media notified.
April, 1983	Open Public Workshops discussing 3 alternatives. Response form distributed.
May 20, 1983	Comment period on 3 alternatives closed.
October, 1983	Draft EIS with fourth and fifth alternative developed from public review and all 5 analyzed.

Final Resource Management Plan/Environmental Impact Statement document expected to be published in September, 1984. The Final will be open to protest by those who have participated in the preceeding process and a State Governors consistency review.

Consistency with officially approved or adopted State and Local resource-related plans, policies, and programs has been maintained within Federal law and regulation. The State and Local counties were asked to send copies or notify the BLM of appropriate documents. Table V-4 displays the results of this search.

TABLE V-4

Consistency Search

State of Colorado -	Front Range Project - Program to the year 2000 Division of Wildlife, Strategic Plan Division of Parks and Outdoor Recreation, State Comprehensive Outdoor Recreation Plan.
Adams County -	Comprehensive Plan Zoning Regulations, Section 11.300 Mineral Conservation - Overlay Zone District The East End Development Plan.
Arapahoe County -	None
Boulder County -	Comprehensive Plan.
Cheyenne County -	None.
Clear Creek County -	None.
Douglas County -	Land Use Plan.
El Paso County -	Land Development Code Book 1990 Land Use Plan Master Plan for the Extraction of Commercial Mineral Deposits.
Elbert County -	Zoning Regulations.
Gilpin County -	None.
Jefferson County -	Land Use Policy Plan Mineral Extraction Policy Plan.
Kit Carson County -	None.
Larimer County -	Land Use Elements (Goals and Objectives, Policy Plan, and Open Space).

Lincoln County	-	None.
Logan County	-	None.
Morgan County	-	None.
Park County	-	General Land Use Plan.
Phillips County	-	None.
Sedgewick County	-	None.
Washington County	-	None.
Weld County	-	Zoning Ordinance Comprehensive Plan Subdivision Regulations Mineral Resource Study Mineral Resource Extraction Plan.
Yuma County	-	Subdivision Regulations Underground Utility Permiting Seismic Testing Permiting.

Where state or county preferences toward land uses were identified this plan maintains consistency as best possible. Where specific action review and permiting by the county is required the appropriate process will be followed to meet county ordinance. The degree of consistency is considered in determining the preferred plan alternative and will again influence the final decision on which plan to implement.

APPENDIX A - METHODOLOGY

MINERALS

Certain criteria were used to classify the public lands and federal subsurface mineral estate as to their mineral potential. Assumptions were made for each mineral catogory based on generalized information about the geology, mineralization and mineral production of the lands. A description for each mineral catogory follows. More detailed information can be found in the MSA and accompanying overlays.

Locatable Minerals

Lands within the historic mining districts of the Front Range Mineral Belt and other areas with large numbers of unpatented mining claims were considered to have high potential for locatable mineral occurances. Areas where uranium is known to occur but have not yet yielded production were deemed to be of moderate potential; as were other lands within the mountainous areas of the resource area. All other lands were classified as low potential.

Salable Minerals

Two factors were used to determine salable mineral potential: the potential of the geologic formation for mineral materials and its distance from probable consuming markets. Floodplains containing appreciable amounts of modern alluvium were rated as high. Eolian deposits (windblown sand and silt) and the Pierre Shale were considered to ahve low potential. All other geologic formations were classified as having moderate potential. If any of these lands fell within the Front Range Urban Corridor (an area roughly 25 miles either side of Interstate 25) their potential was raised by one catagory. For example; lands upon which the Pierre Shale outcrops, which would normally have low potential would be considered to have moderate potential by virtue of its proximity to a possible market if it lays within the Urban corridor.

Coal

All lands falling within the Denver Basin Known Recoverable Coal Resource Area (KRCRA) were deemed to have high potential. Moderate potential areas include near surface occurances of Denver and Lamarie formation coal beds. All other areas that fall within the Denver and Cheyenne Coal Basins (i.e., interior to the outcrop of the Laramie formation) were considered to have low coal potential. Lands outside of the coal basins are thought to contain no coal. Please note that these potential classifications bear no relationship to those used in the Coal Resource Occurance/Coal Development Potential (CRO/CDP) map series formerly published by the U.S. Geological Survey. CRO/CDP mapping was not done for the Denver Basin KRCRA.

Oil and Gas

Lands west of the "prospectively valuable" line as determined by the USGS (located approximately along the mountain front) are classified as low potential. Lands within the "fairway" area of the Denver Basin (i.e. those areas currently producing, and along the Las Animas Arch) and an area whre shallow gas production from the Niobrara Formation has been found or is thought to exist have been considered to be of high potential. All other areas are deemed to have moderate potential for oil and gas.

Minerals Rating System

The Rocky Mountain Oil and Gas Association devised a rating system whereby geologic potential can be combined with access restrictions to yield an index reflecting the likelihood of mineral development. In general, high potential lands with low access restrictions are most likely to be developed, and low potential lands or highly restricted lands are least likely to experience mineral development. Surface access restrictions (which may vary between planning alternatives) and subsurface geologic potential (which is fixed for a given area) are displayed in a table. As an example, Alternative A for salable minerals appears as follows:

		Potential	
	High	Moderate	Low
(Access Restrictions) Open (Low)	319.9	445.43	3,332.76
Concern Area (Moderate)	10,005.27	13,873.55	481.01
Closed (High)	401.6	1927.88	6210

Total acres = 36,997.4.

These acreages are then weighted according to potential and access restrictions. The weights are arbitrary in that high potential is three times as important (3X) as low potential (1X) and that moderate is twice as important (2X). Similarly, low access restriction is three times as important (3X) as high access restriction (1X), and moderate is twice (2X). Cross products (weights) may then be calculated:

		Potential	
	High(3X)	Moderate(2X)	Low(1X)
(Access Restrictions) Low (3X)	9X	6X	3X
Moderate (2X)	6X	4X	2X
High (1X)	3X	2X	1X

Using these arbitrary weights, it can be imagined that an acre of land of high geologic potential with low access restrictions is 9 times more likely to be developed than an acre of low geologic potential with high access restrictions. The acreages for each category are then multiplied by the corresponding cross product.

		Potential	
	High(3X)	Moderate(2X)	Low(1X)
(Access Restrictions) Low (3X)	9X319.9	6X445.43	3X3332.26
Moderate (2X)	6X10,005.27	4X13,873.55	2X481.01
High (1X)	3X401.6	2X1927.88	1X6210

Resulting in the following numbers:

		Potential	
	High	Moderate	Low
(Access Restrictions) Low	2879.1	2672.58	9998.28
Moderate	60,031.62	55,494.2	962.02
High	1204.8	3855.76	6210

Which are added together:

2879.1 + 60,031.62 + 1204.8 + 2672.58 + 55,494.2 + 3855.76 + 9998.28 + 962.02 + 6210 = 143,308.36

Divided by the total acreage:
143,308.36 ÷ 36,997.4 acres = 3.87 favorability index.

To give this number some meaning it should be compard to the numbers which would result if all acres were placed in the low access restriction category:

		Potential	
	High(3X)	Moderate(2X)	Low(1X)
(Access Restrictions) Low (3X)	9X10,726.77	6X16,246.86	3X10,023.77

96,540.93 + 97,481.16 + 30,071.31 = 224,093.4
224,093.4 ÷ 36,997.4 acres = 6.06

		Potential	
	High(3X)	Moderate(2X)	Low(1X)
(Access Restrictions) High (1X)	3X10,726.77	2X16,246.86	1X10,023.77

32,180.31 + 32,493.72 + 10,023.77 = 74,697.8
74,697.8 ÷ 36,997.4 acres = 2.02

The index drops from 3.87 to 2.02.

The most favorable factor possible (6.06) can be assigned a 100% score; the least favorable factor possible (2.02) can be assigned a 0% score. Proportionally, the actual factor of 3.87 for Alternative A can be assigned a score of 45.8%. This means that accessibility to public lands in Alternative A for salable mineral operations is 45.8% of what it could be if no access restrictions were imposed at all.

WILDLIFE

Wildlife Species of "High Interest", were provided by the Colorado Division of Wildlife and the U.S. Fish and Wildlife Service. They are as follows:

		Status	
Common Names	Scientific Names	Federal	State
Birds			
Western grebe	Aechmorphorus occidentailis		
White pelican	Pelecanus erythrorhynshos		T
Double-crested cornorant	Phalacrocorax auritus		
Ferruginous hawk	Buteo regalis		
Golden eagle	Aquila chrysaetos		

Cont' Common Names	Scientific Names	Status Federal	 State
Birds			
Bald eagle	Haliaeetus leucocephalus	E	E
Osprey	Pandion haliaetus		
Prairie falcon	Falco mexicanus		
Peregrine falcon	Falco peregrinus	E	E
Wild turkey	Meleagris gallopauo		
Prairie sharp-tailed grouse	Pedioecetes phasianellus jamesi		E
Greater prairie chicken	Tympanuchus cupido		E
Scaled quail	Callipepla squamata		
Bobwhite	Colinus virginianus		
Great blue heron	Ardea herodias		
Black-crowned night heron	Hycticorax nycticorax		
White faced ibis	Plegadis chihi		
Whooping crane	Grus americana	E	E
Greates sandhill crane	Grus canadensis		E
Mountain plover	Eupoda montana		
Long-billed curlew	Numenius americanus		
Black tern	Chlidonias niger		
Land-tailed pigeon	Columba fasciata		
Mourning dove	Zenaidura macroura		
Spotted owl	Strix occidentalis		
Burrowing owl	Speotyto cunicularia		
Lammulated owl	Otus flammeolus		
Red-headed woodpecker	Melaneopes erythrocephalus		
Lewis woodpecker	Asyndesmus lewis		
Williamson's sapsucker	Sphyrapicus thyroideus		
Northern three-toed woodpecker	Picoides tridactylus		
Pinon jay	Gymnorhinus cyanocephalus		
Plain titmouse	Parus inornatus		
Common bushtit	Psaltriparus minimus		
Pygmy nuthatch	Sitta pygmaea		
Bewick's wren	Thryomanes bewicki		
Long-billed marsh wren	Telmatodytes palustris		
Moutain bluebird	Sialia currucoides		
Pine grosbeak	Pinicola enucleatos		
Mammals			
Pygmy shrew	Microsorex hoyi		
Least shrew	Cryptotis parva		
Pingtail	Bassariscus astutus		
Black-footed ferret	Mustela mgripes	E	E
River otter	Lutra canadensis		E
Wolverine	Gulo gulo		E
Mountain lion	Felis concolor		
Lynx	Lynx canadensis		E
Bobcat	Lynx rufus		
Abert's squirrel	Sciurus abriti		
Eastern fex squirrel	Sciurus niger		
Chestnut faced pocket gopher	Pappogeomys castonaps		
Beaver	Castor canadensis		
Brush mouse	Peronyscus boylei		
Pinon mouse	Peromyscus truei		
Southern redback vole	Clethrionomys gapperi		
Meadow jumping mouse	Zapus hudsonius		
Pika	Ochotona princeps		
Elk	Cervus elaphus		
Mule deer	Odocoileus hemionus		
White-tailed deer	Odocoileus virginianus		
Pronghorn	Antilocapra americana		
Bighorn sheep	Ovis canadensis		
Amphibians			
Western mountain wood frog	Rana sylvatica		T
Fish			
Rainbow trout	Salmo qairdneri		
Brook trout	Salvelinus fontinalis		
Brown trout	Salmo trutta		
Cutthrout trout	Salmo clarki		T
Northern pike	Esox lueius		
Walleye	Stizostedion vitreum		
Yellow perch	Perca flavescene		
Black bullhead	Ictalurus melas		
Channel catfish	Ictalurus punctatus		
Bluegill	Lepomis macrochirus		
Black crappie	Pomoxis nigromaculatus		
White crappie	Pomoxis annuloris		
Smallmouth bass	Microptorus dolomieui		
Largemouth bass	Microptorus salmoides		
White bass	Moroue chrysops		
Green sunfish	Lepomis cyanellus		
Stripe bass cross with white bass (wiper)	Morone saxatilis (cross with) Moroue chrysops		
Johnny darter	Etheostoma nigrum		T
Arkansas darter	Etheostoma cragiui		T
Orangethroat darter	Etheostoma spectabile		T
Spottail shiner	Notropis hudsouius		
Gizzard shad	Dorosoma cepedianum		
Greenback cutthrout Trout	Salmo clarki stomias	T	T

T = threatened
E = endangered

SOILS

Status of Soil Inventories in the Northeast Resource Area

Soil Survey Area	County	Status of Inventory	Location of Data
Adams	Adams	Published	Northeast RA Office, Wheatridge, CO; SCS SO, Denver, CO
Arapahoe	Arapahoe	Published	Same as above
Boulder	Boulder	Published	Same as above
Castle Rock	Douglas	Published	Same as above
Elbert Co (E. Part)	Elbert	Published	Same as above
Elbert Co (W. Part)	Elbert	Published	Same as above
Cheyenne	Cheyenne	In Progress	SCS Office, Cheyenne Wells
El Paso	El Paso	Published	Northeast RA Office, Wheatridge, CO; SCS SO, Denver, CO
Georgetown	Clear Creek	None*	
Golden Area	Jefferson	Completed-Not Published	SCS Office, Lakewood, CO; SCS SO, Denver, CO
Kiowa	Kiows	Published	Northeast RA Office Wheatridge, CO; SCS SO, Denver, CO
Larimer	Larimer	Published	Same as above
Lincoln	Lincoln	None*	
Logan	Logan	Published	Northeast RA Office, Wheatridge, CO; SCS SO, Denver, CO
Morgan	Morgan	Published	Same as above
Phillips	Phillips	Published	Same as above
Washington	Washington	Completed - Not Published	SCS Office, Akron, CO; SCS SO, Denver, CO
Weld Co (N. Part)	Weld	Published	Northeast RA Office, CO; SCS SO, Denver, CO
Weld Co (S. Part)	Weld	Published	Same as above

* No detailed inventories available. General data is available at Northeast Resource Area in Wheatridge or BLM State Office in Denver, Colorado.

Soils Inventory Intensity Definitions

Order 2 Soil Inventories

- These surveys are designed for operational planning that requires making predictions of the suitability of soils for various uses. The need for management or treatment of related broad areas, but not selection of specific sites for structures. Example, recreation picnic areas, high soil disturbance areas due to energy-related activities, etc.
- Map units are consociations, associations and complexes.
- Components of the map units consist of phases of soil series.
- The soils in each delineation are identified in the field by traversing and transecting. Soil boundaries are plotted by observation and air photo interpretations. Boundaries are photo interpretations. Boundaries are verified at closely spaced intervals.
- Map scales range from 1:12,000 to 1:20,000.
- Minimum size delineations are 2.5 to 10.0 acres.

Order 3 Soil Inventories

- These surveys are applicable for general planning of county and multi-county districts, planning for extensive uses of rangeland, woodland and arid land, where interpretations of soils properties are not required for intensive use. Examples are Land Use Plans, Resource Activity Plans, etc.
- Map units are associations, some consociations and complexes.
- Components of map units consist of phases of soil series and soil families.
- The soils in each delineation are defined in the field by transecting, traversing and some observations. Boundaries are plotted by observation, air photo interpretation and verified with some observations.
- Map scales range from 1:20,000 to 1:62:300.
- Minimum size of delineations are 6 to 640 acres.

LEGEND FOR APPENDIX B

Introduction

These tables describe the current management and alternative management of the lands where the surface and subsurface is publicly owned and administered by the Bureau of Land Management. Each decision area is identified by 1) a number which corresponds to a base map (204=zone 2 unit 04, 1006=zone 10 unit 06, etc.), 2) a name derived from local geography, and 3) the Township, Range, and Sections where the land is found. Acreage is estimated by sections and totaled.

The alternatives to the current (column A) issue management are shown in columns B, C, D, and E. No entries under these columns mean that current management should and would be continued. Underlined issues are those to be emphasized or given priority if and when proposed actions conflict. Double underlined issues are identified to show top priority over other issues with priority. Refer to Chapter II prescription definitions for explanations of management. The issues and decision choices are organized by the following list. For easy reference in reviewing Appendix B or C cut this list out along dotted line.

1. Land Status
   A. Retention, federal
   B. Disposal, non-federal
   C. Specific Review, before disposal

2. Access
   A. Existing, legal public
   B. Needed
   C. None, existing nor needed

3. Wildlife Habitat
   A. Important, habitat improvement
   B. General, habitat protection

4. Timber and Firewood
   A. Available, for sustained yield harvest
   B. Unavailable, limited minor harvest
   C. Non-commercial, withdrawn from harvest
   D. Non-forest

5. Livestock Grazing
   A. Leased, presently for grazing
   B. Open, to grazing application
   C. Closed, to grazing

6. Water Quality
   A. Concern Area, identified
   B. General, protection

7. Water Sources
   A. Known, source identified
   B. None, identified

8. Soil Erosion
   A. Problem Area, correction
   B. Stable/Slight, hazard
   C. Moderate, hazard
   D. Critical/Severe, hazard

9. Agricultural Use
   A. Open, to application
   B. Closed, to application

10. Wildfire
    A. Cooperative, control agreement needed
    B. General, agreement not needed

11. Prescribed Burning
    A. Open, for consideration
    B. Closed, to prescribed burning

12. Open Space
    A. Important, open space protected
    B. General, open space provided

13. Scenic Quality
    A. Class I, superior natural scenery
    B. Class II, highly natural scenery
    C. Class III, moderately natural scenery
    D. Class IV, low natural scenery
    E. Class V, rehabilitation needed

14. Recreational Opportunity
    A. SPNM, semi-primitive non-motorized character
    B. SPM, semi-primitive motorized character
    C. Roaded Natural, character
    D. Rural, character
    E. Urban, character

15. Cultural (archaeologic & historic)
    A. NRHP, National Register of Historic Places
    B. State/Local, value site
    C. Limited, value site
    D. High, potential for sites
    E. Low, potential for sites
    F. None, no values

16. Paleontologic (fossils) Values
    A. Class Ia, significant fossils located
    B. Calss Ib, high potential for fossils
    C. Class II, low potential for fossils
    D. Class III, no potential for fossils

17. Geologic Features and Hazards
    A. Concern Area, for feature or hazard identified
    B. None, identified

18. Locatable (hardrock) Minerals
    A. Available, for location of claims
    B. Concern Area, available with identified minor conflict
    C. Closed, to location of claims

19. Salable (sand, gravel, rock) Minerals
    A. Open, to application
    B. Concern Area, open with identified minor conflict
    C. Closed, to application

20. Coal
    A. Suitable, for coal leasing
    B. Open, to application
    C. Unsuitable, for coal leasing
    D. None, no coal-closed to application

21. Oil and Gas
    A. Standard, stipulations for leasing
    B. Seasonal, no surface occupancy stipulations
    C. Yearlong, no surface occupancy
    D. Open, for case by case application review
    E. Unsuitable, for leasing

22. Air Quality
    A. General, protection

23. Roads and Trails
    A. General, protection

24. Pests
    A. General, control standards

25. Use Authorizations
    A. General, processing standards

26. Public Information
    A. General, program

27. Unauthorized Use
    A. General, elimination and prevention policies

28. Economics
    A. General, analysis standards

29. Sociology
    A. General, analysis standards

Refer to Chapter II for a complete description of these management categories.

NOTES

APPENDIX B

MANAGEMENT OF PUBLIC LAND

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
101. Truckton		1B Disposal/1				
T14S R61W		2C None				
S35	40	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General				
		13D Class 1V				
		14C Roaded Natural				
		15E Low				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20B Open				
		21A Standard				
		22-29A General				

/1 General.

Mgt. Unit	Acres	A	B	C	D	E
201. Julesburg		1B Disposal/1				
T11N R44W		2C None				
S18	34.04	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14D Rural				
		15D High				
		16B Class Ib				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.

Mgt. Unit	Acres	A	B	C	D	E
202. Tamarack		1A Retention/5		1B Disposal/1	1B Disposal/1	1B Disposal/1
T10N R48W		2A Existing/2				
S22	80	3A Important/3	3A Important/3		3A Important/3	3A Important/3
		4D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18A Available	18B Concern Area		18B Concern Area	18B Concern Area
		19A Open	19B Concern Area		19B Concern Area	19B Concern Area
		20D None				
		21A Standard	21B Seasonal/4		21B Seasonal/4	21B Seasonal/4
		22-29A General				

/1 Colorado Division of Wildlife - Tamarack State Wildlife Area.
/2 County Road.
/3 Greater Prairie Chicken.
/4 Surface occupancy allowed between 6/15 and 2/28 only for greater prairie chicken habitat protection.
/5 Values: Wildlife, scenic, access, recreation.

Mgt. Unit	Acres	A	B	C	D	E
203. Sedgwick		1A Retention/2		1B Disposal/1	1B Disposal/1	1B Disposal/1
T10 R47W		2C None				
S17	40	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Values: General multiple use.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
204. Hwy. 63		1B Disposal/1				
T6N R52W		2C None/2				
S7	36	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road.

Mgt. Unit	Acres	A	B	C	D	E
205. Wray		1A Retention/6		1B Disposal/5	1B Disposal/5	1B Disposal/5
T3N R43W		2C None				
S24	40	3A Important/2	3A Important/2		3A Important/2	3A Important/2
S25	40	4D Nonforest				
	80	5A Leased/1			5A Leased/7	5A Leased/7
		B Open			B Open	B Open
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18C Closed/4				
		19B Concern Area	19C Closed		19C Closed	19C Closed
		20D None				
		21B Seasonal/3				
		22-29A General				

/1 S24 leased only.
/2 Greater Prairie Chicken.
/3 Surface occupancy allowed between 6/15 and 2/28 only for greater prairie chicken habitat protection.
/4 Public land order 5061 withdrawn for protection of recreation and wildlife values.
/5 Colorado DOW.
/6 Values: Wildlife, recreation.
/7 Grazing lease provisions included in disposal.

Mgt. Unit	Acres	A	B	C	D	E
206. Lower Bijou Cr.		1A Retention/5		1B Disposal/4	1B Disposal/4	1B Disposal/4
T2N R59W		2C None				
S17	40	3A Important/1				
		4D Nonforest				
		5B Open				
		6A Concern Area/3			6A Concern Area/6	6A Concern Area/6
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/2				
		22-29A General				

/1 Mule deer and raptor habitat.
/2 Surface occupancy allowed between 7/1 and 11/15 only for mule deer and raptor habitat protection.
/3 Floodplain.
/4 General.
/5 Values: Wildlife, floodplain.
/6 Floodplain provisions included in disposal.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
207. Upper Bijou Cr		1A Retention/5		1B Disposal/4	1B Disposal	1B Disposal
T1N R60W		2C None				
S24	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5B Open				
		6A Concern Area/3			6A Concern Area/6	6A Concern Area/6
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/2				
		22-29A General				

/1 Mule deer, bald eagle, and raptors.
/2 Seasonal occupancy allowed between 7/1 and 11/15 only for bald eagle and raptor nesting habitat protection.
/3 Floodplain.
/4 General.
/5 Values: Wildlife, floodplain.
/6 Floodplain provisions included in disposal.

208. Washington		1B Disposal/1				
T3S R50W		2C None				
S21	40	3B General				
S23	120	4D Nonforest				
	160	5B Open				
		6A General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road to S23 only.

209. Bonny		1A Retention/7		1B Disposal/6	1B Disposal/6	1B Disposal/6
T5S R43W		2A Existing/2				
S11	.32	C None				
S15	1.60	3A Important/1				
	1.92	4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14D Rural				
		15D High				
		16C ClassII				
		17B None				
		18C Closed/4				
		19B Concern Area/5				
		C Closed				
		20D None				
		21B Seasonal/3				
		E Unsuitable				
		22-29A General				

/1 Bald eagle, greater prairie chicken, orange throat darter, mule deer, and waterfowl.
/2 County road to the southern lot in S15, private road to the north lot S15 only, all having walking access across DOW lands.
/3 Surface occupancy of S11 allowed between 6/15 and 2/28 only for greater prairie chicken habitat protection, S15 is closed due to its proximity to Bonny Dam.
/4 S11-lot 21 and S15-lot 13 classified for Recreation and Public Purposes (C-9585); S15 lot 19 BLM order 12/22/49 withdrawn for Missouri River Basin Reclamation Project, Bonny Reservoir.
/5 S11 open concern area and S15 closed to application.
/6 Colorado Division of Wildlife - adjacent DOW land. Wildlife area; State Recreation Area.
/7 Values: Wildlife, recreation, reclamation project.

Mgt. Unit	Acres	A	B	C	D	E
210. Republican River		1B Disposal/1				
T5SW R45W		2A Existing/2				
	S27 79.74	C None				
	S31 40.00	3B General				
	S32 80.00	4D Nonforest				
	199.74	5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15D High				
		16B Class 1b				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 County road to south parcel S32, private road to north parcel S32 only.

211. Arikaree River		1B Disposal/1				
T6S R52W		2C None				
	S2 80.00	3B General				
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8C Moderate				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road.

212. Hugo		1B Disposal/1				
T11S R53W		2A Existing/2				
	S2 133.58	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 County road.

213. Boyero		1B Disposal/1				
T13S R52W		2A Existing/2				
	S28 80.00	3B General				
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 County road.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
214. Punkin Center		1B Disposal/1				
T14S R58W		2C None				
S2	40.00	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.

Mgt. Unit	Acres	A	B	C	D	E
215. Karval		1B Disposal/1	1B Disposal/4		1B Disposal/4	1B Disposal/4
T15S R55W		2A Existing/3				
S26	120.00	C None				
S35	320.00	3A Important/2				
T16S R55W		4D Nonforest				
S1	151.63	5A Leased				
S2	71.50	6B General				
	663.13	7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

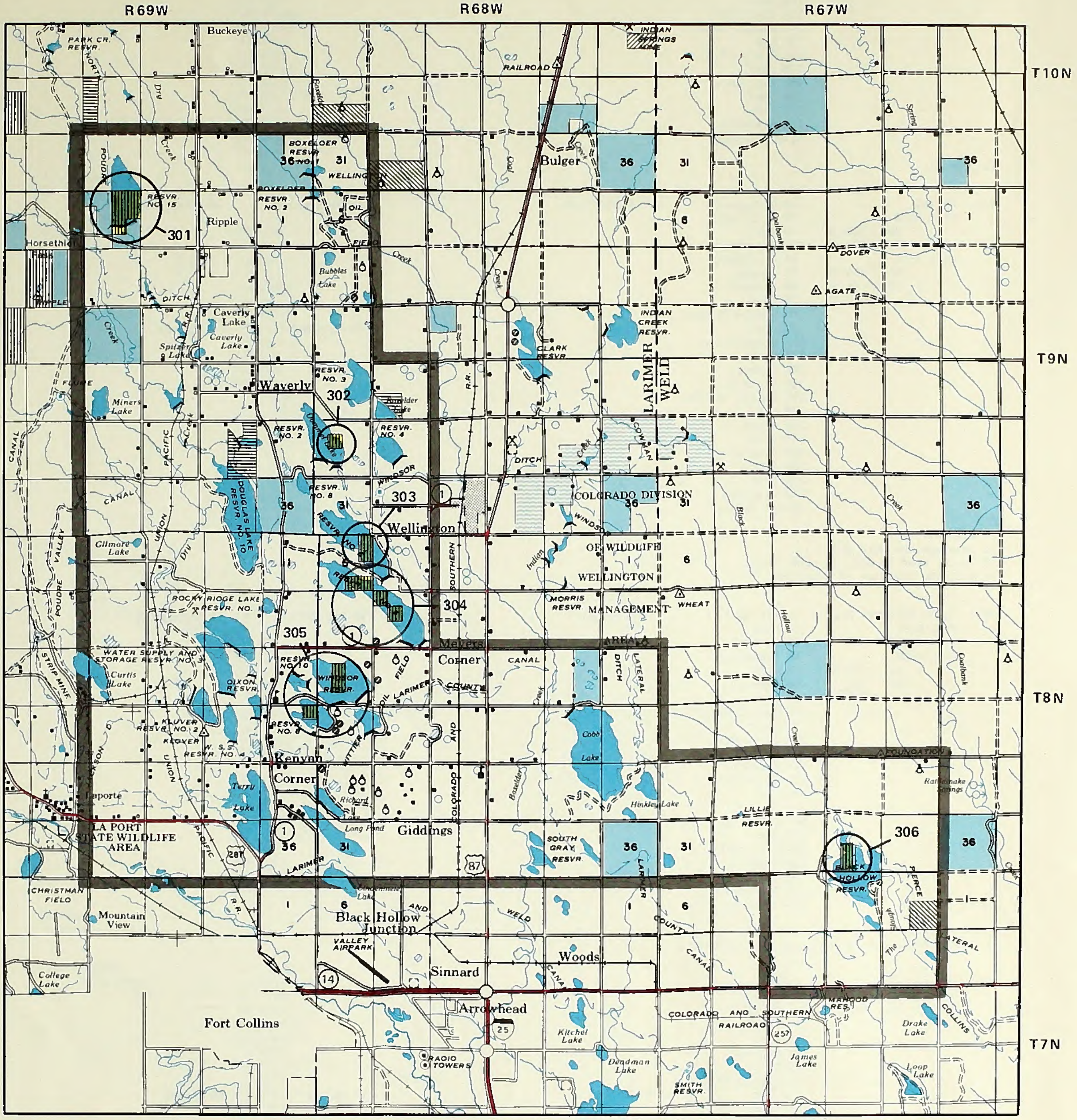
/1 General.
/2 Antelope and mule deer.
/3 County road to S26, 35, and 2 only.
/4 Colorado Division of Wildlife.

Mgt. Unit	Acres	A	B	C	D	E
216. Black Squirrel Cr.		1B Disposal/1	1B Disposal/2		1B Disposal/1	1B Disposal/1
T16S R62W		2C None				
S24	40	3B General				
T17S R62W		4D Nonforest				
S1	80.02	5B Open				
S9	40	6B General				
	160.02	7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 State of Colorado land adjoins all 3 parcels.

Mgt. Unit	Acres	A	B	C	D	E
217. Upper Pond Cr.		1B Disposal/1				
T16S R58W		2C None/2				
S6	15.17	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road.



NORTHEAST RESOURCE AREA

RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(a)

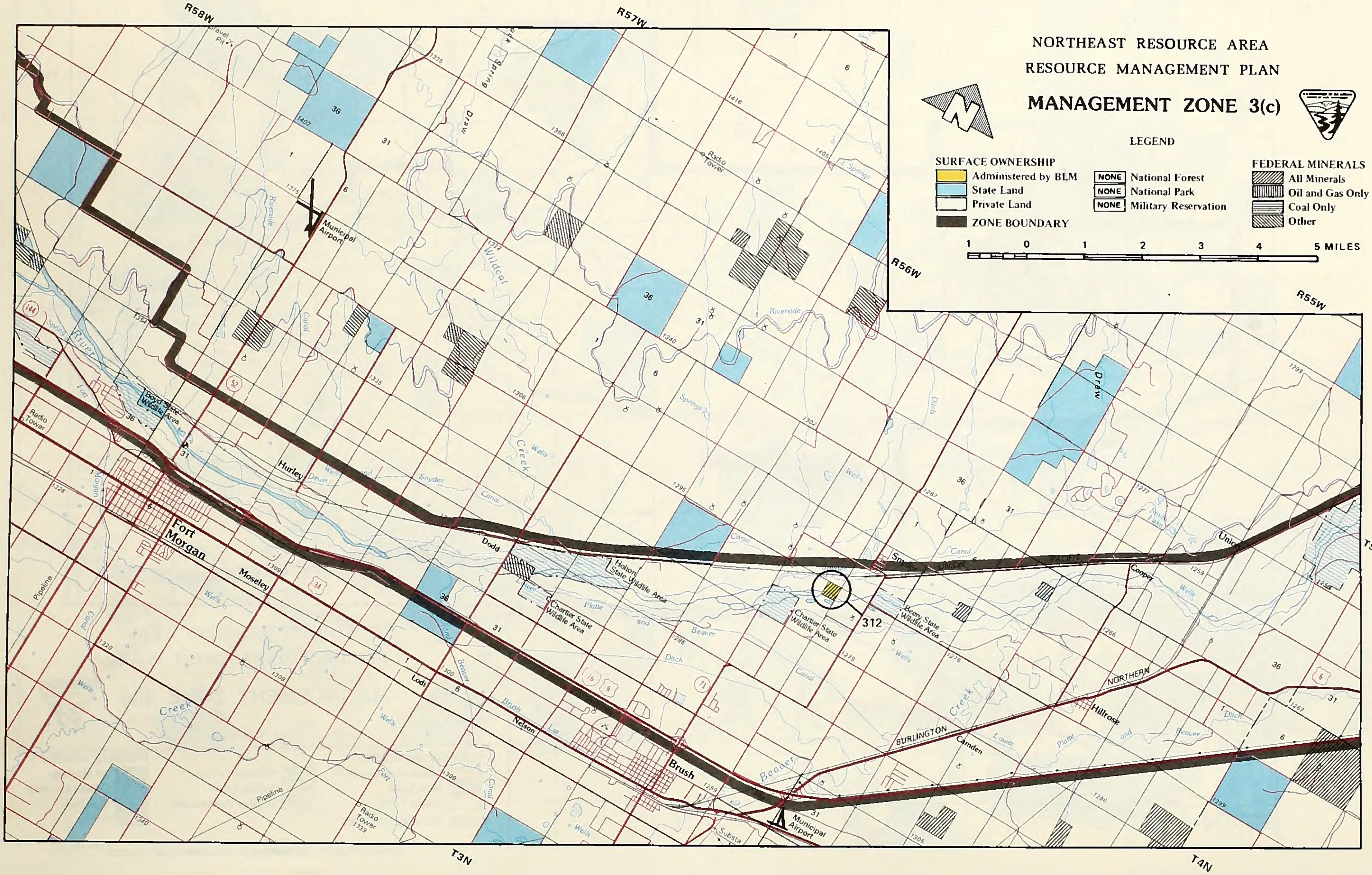
LEGEND

SURFACE OWNERSHIP
- 🟨 Administered by BLM
- 🟦 State Land
- ☐ Private Land
- ■ ZONE BOUNDARY

- NONE National Forest
- NONE National Park
- NONE Military Reservation

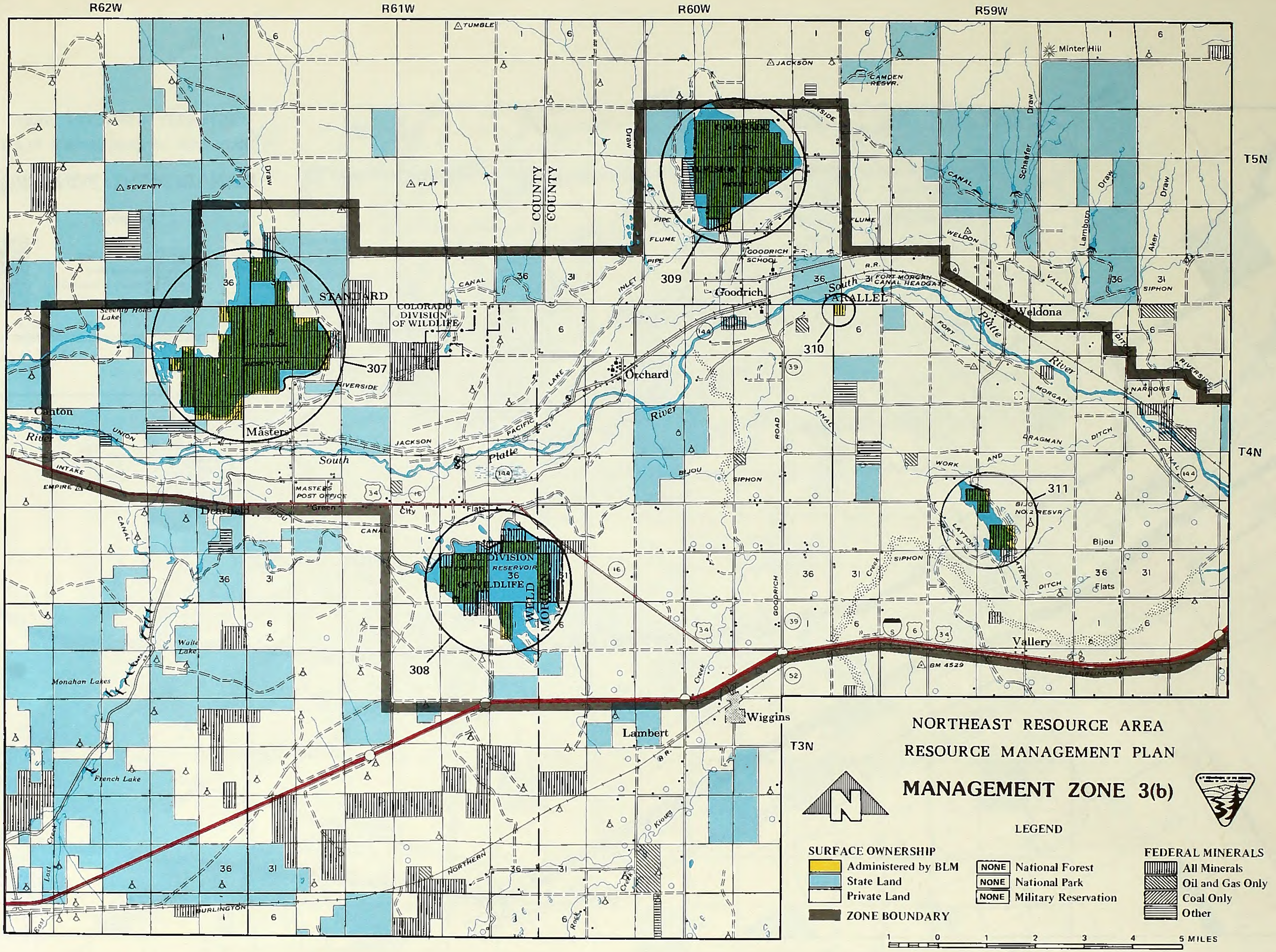
FEDERAL MINERALS
- ▥ All Minerals
- ▧ Oil and Gas Only
- ▨ Coal Only
- ▤ Other

1 0 1 2 3 4 5 MILES

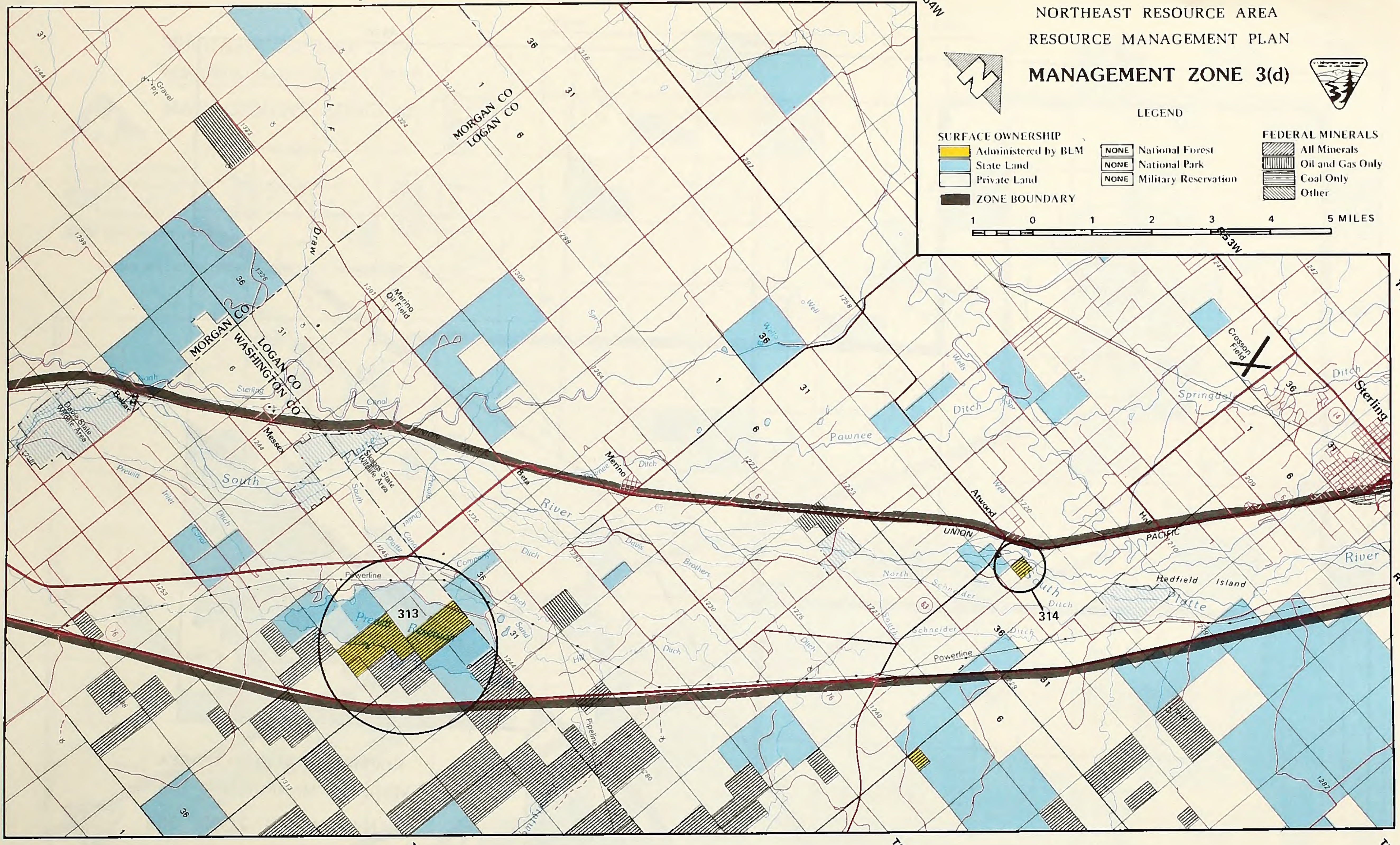


NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(c)



NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN
MANAGEMENT ZONE 3(b)



NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(d)

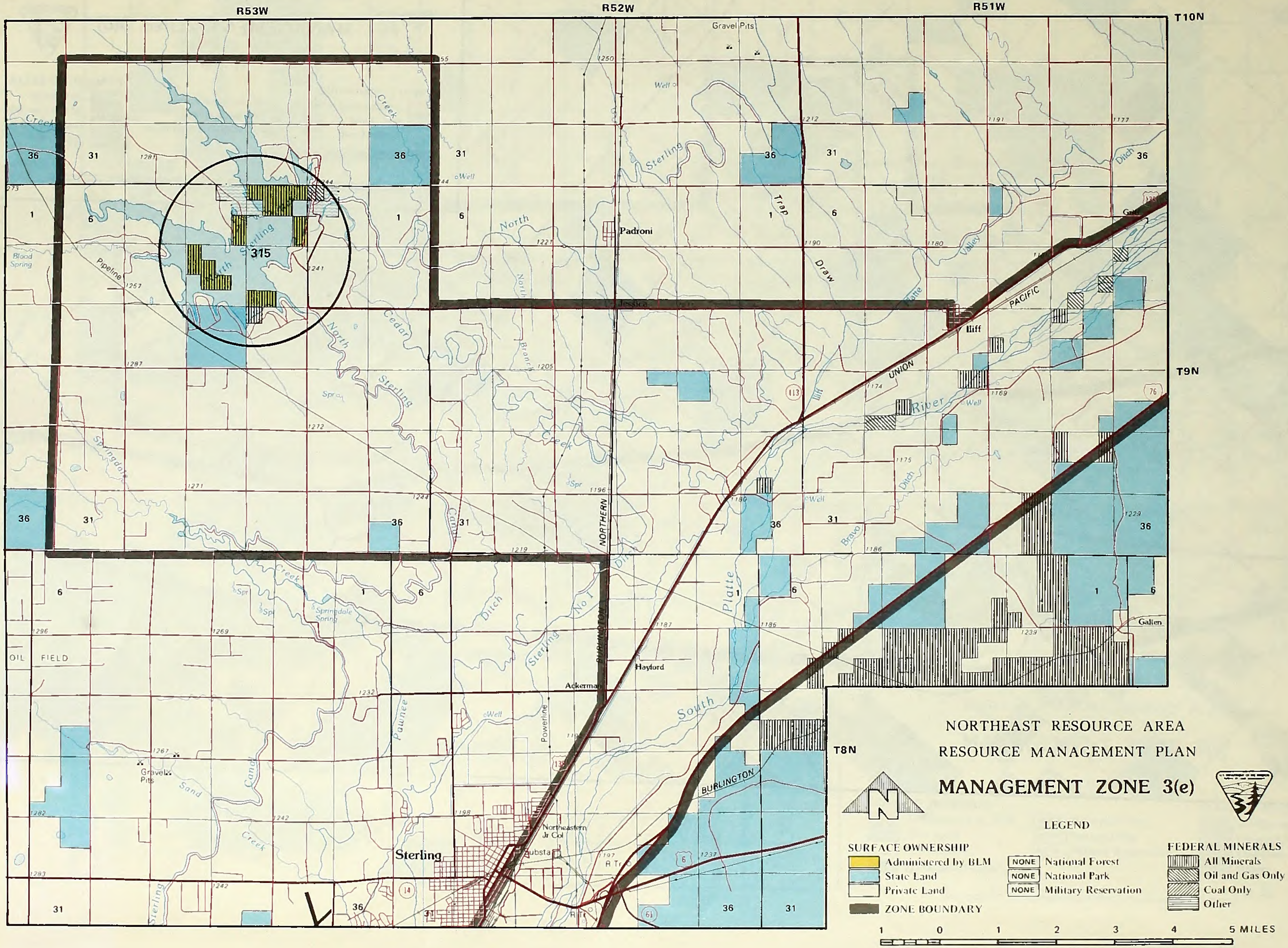
LEGEND

SURFACE OWNERSHIP
- 🟨 Administered by BLM
- 🟦 State Land
- ☐ Private Land
- ■ ZONE BOUNDARY

- NONE National Forest
- NONE National Park
- NONE Military Reservation

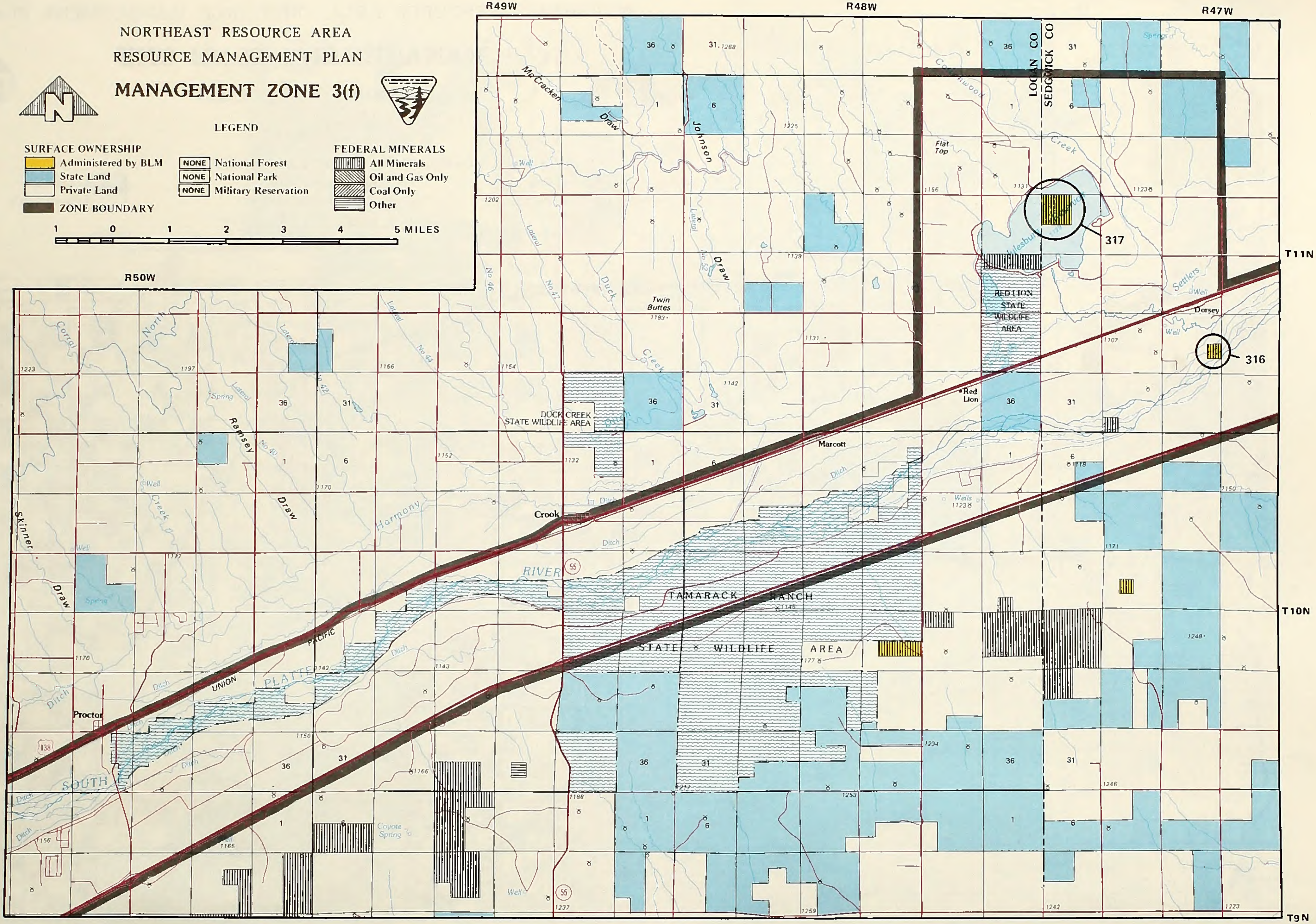
FEDERAL MINERALS
- ▨ All Minerals
- ▥ Oil and Gas Only
- ▤ Coal Only
- ▨ Other

1 0 1 2 3 4 5 MILES



NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(e)



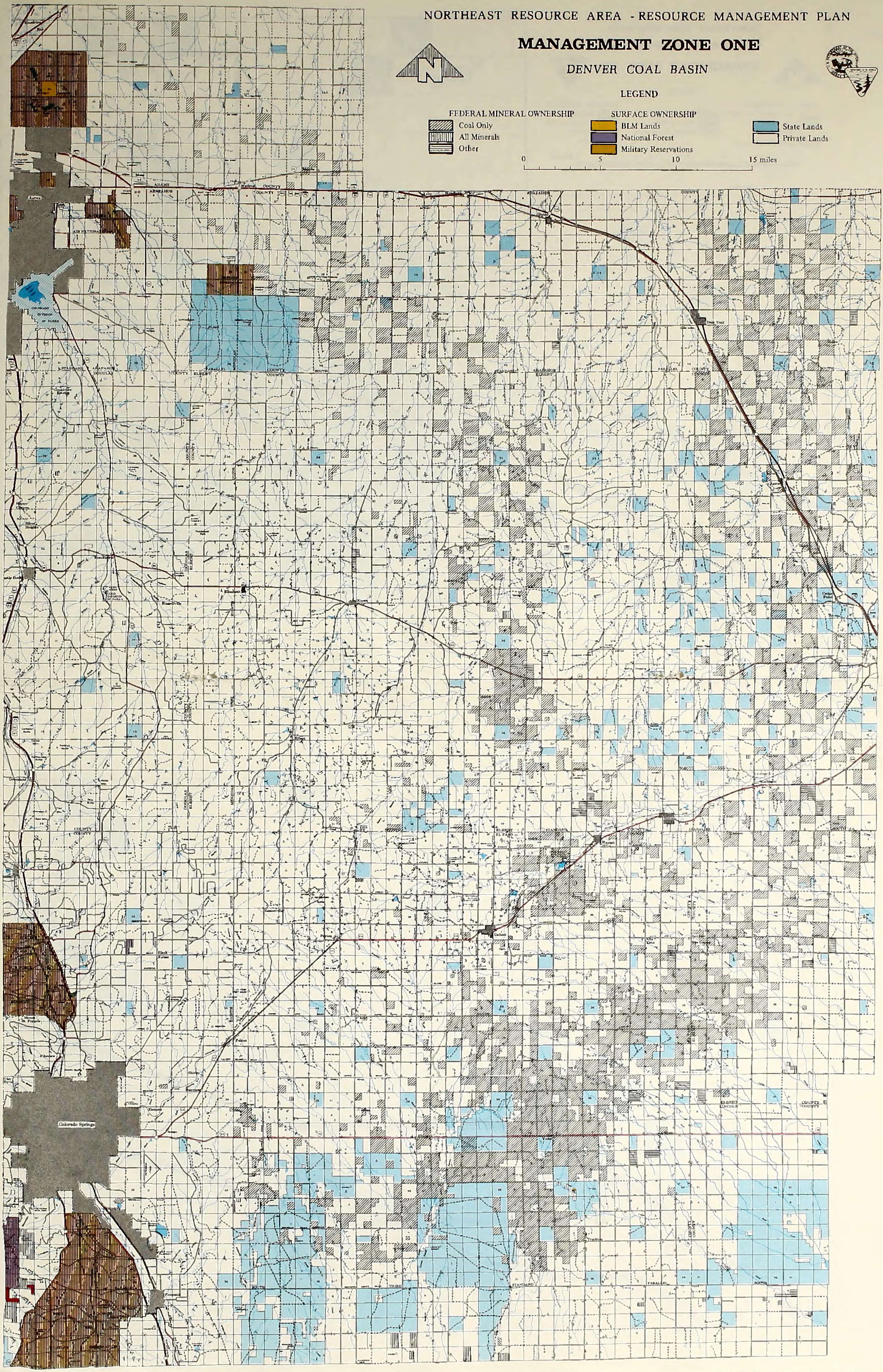
NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(f)

NORTHEAST RESOURCE AREA - RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE ONE

DENVER COAL BASIN



LEGEND

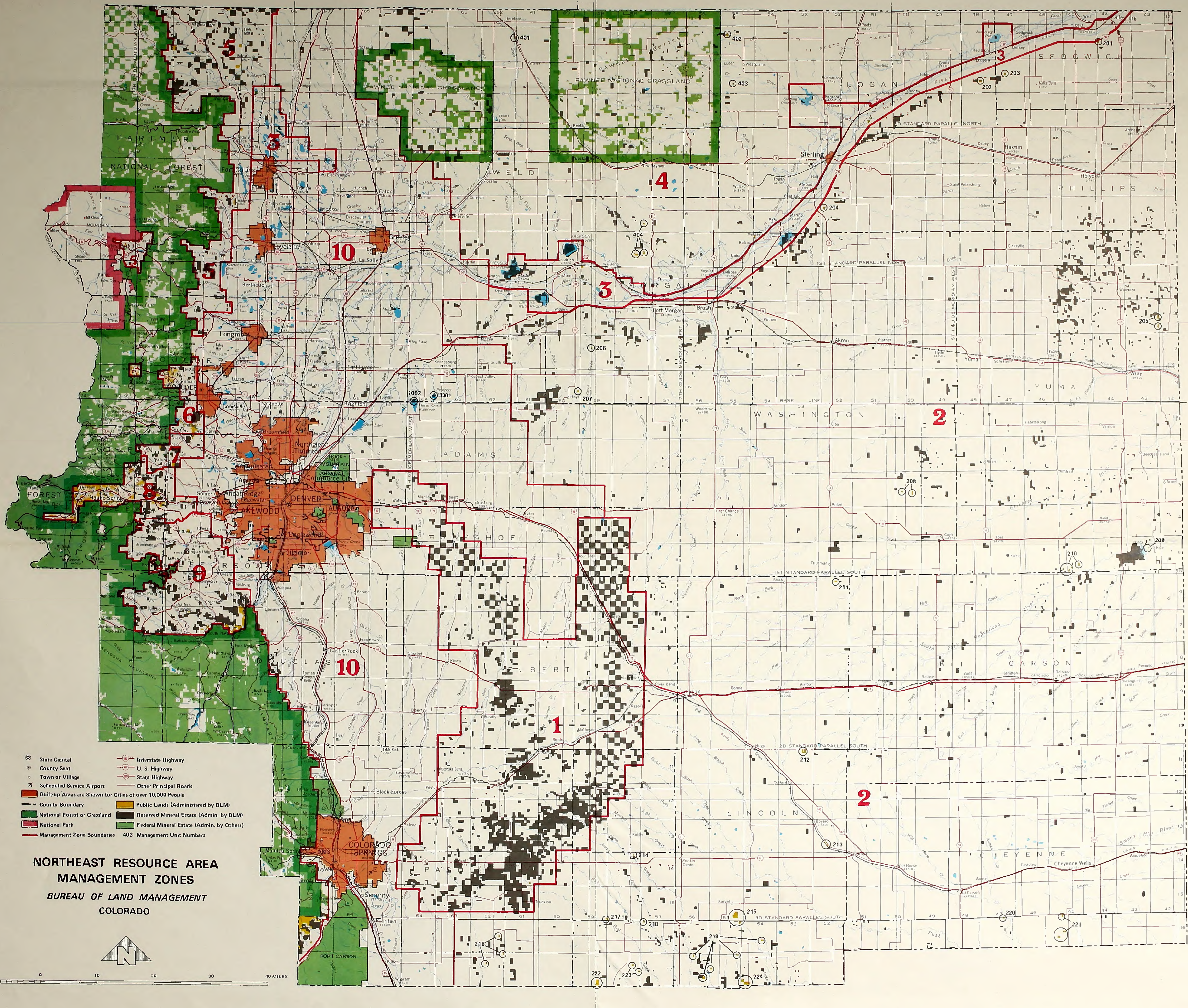
FEDERAL MINERAL OWNERSHIP	SURFACE OWNERSHIP	
▨ Coal Only	▨ BLM Lands	▨ State Lands
▥ All Minerals	▨ National Forest	☐ Private Lands
▤ Other	▨ Military Reservations	

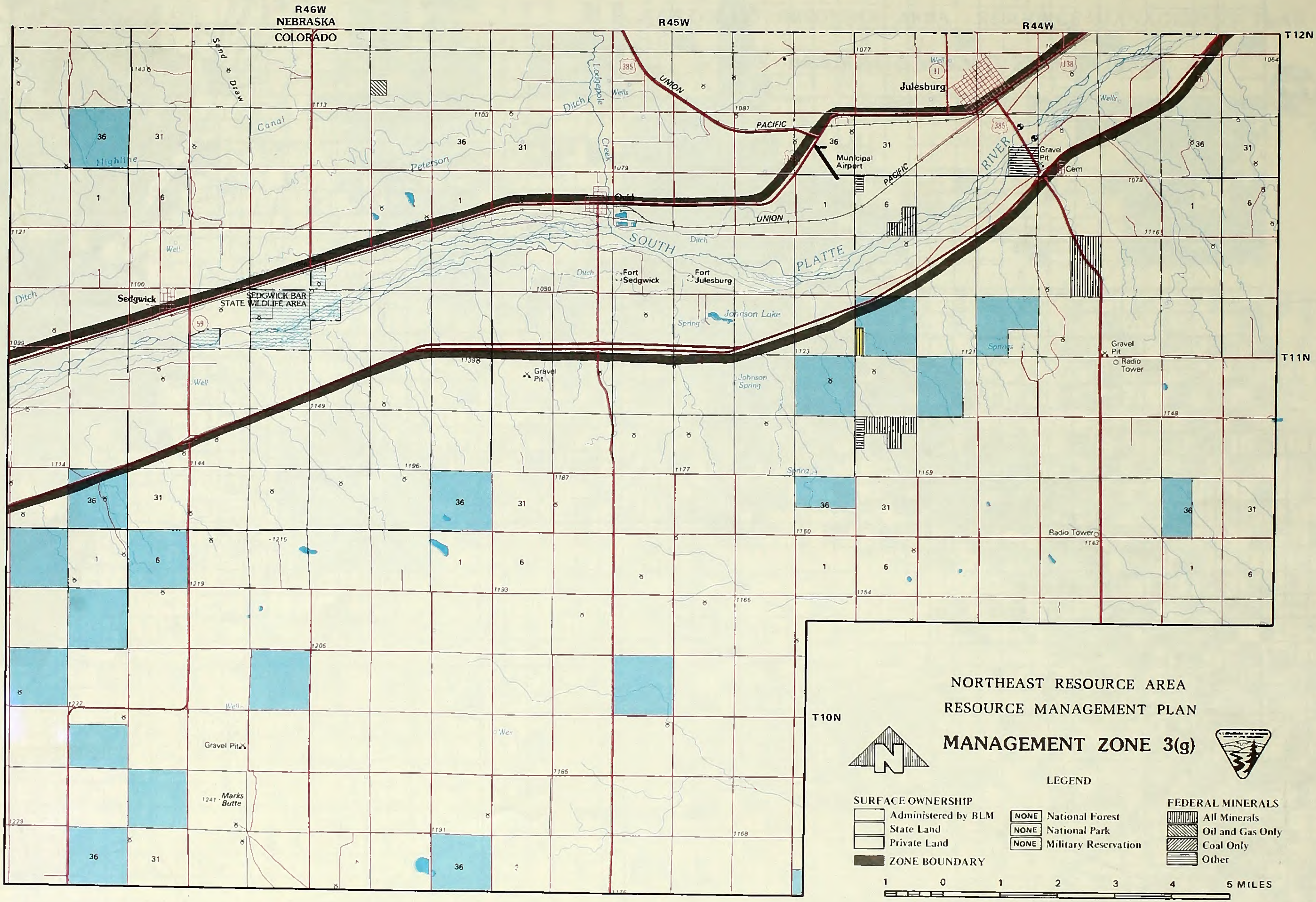
0 5 10 15 miles

NORTHEAST RESOURCE AREA MANAGEMENT ZONES

BUREAU OF LAND MANAGEMENT

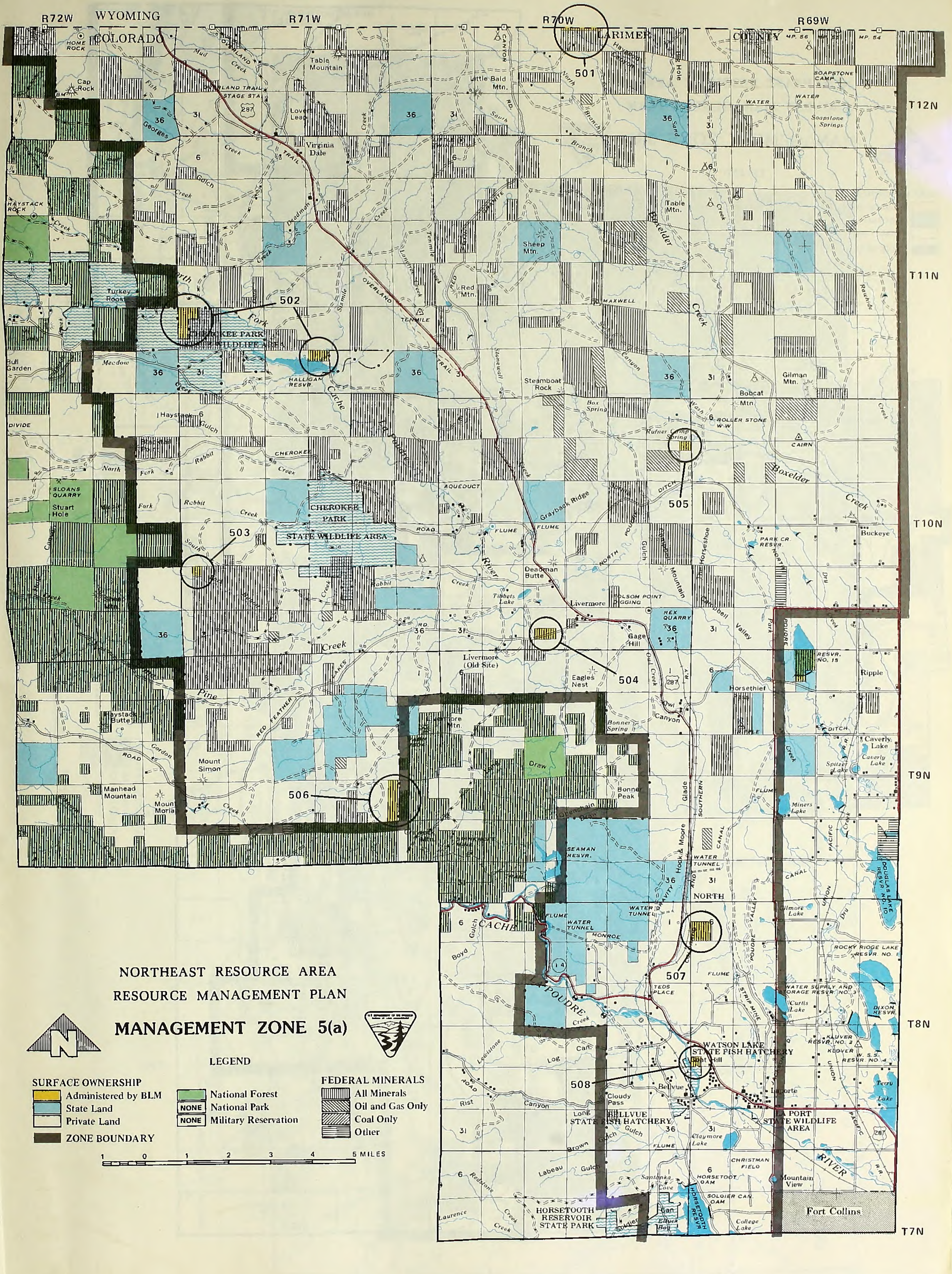
COLORADO





NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 3(g)



NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 5(a)

LEGEND

SURFACE OWNERSHIP
- 🟨 Administered by BLM
- 🟦 State Land
- ☐ Private Land
- ■ ZONE BOUNDARY

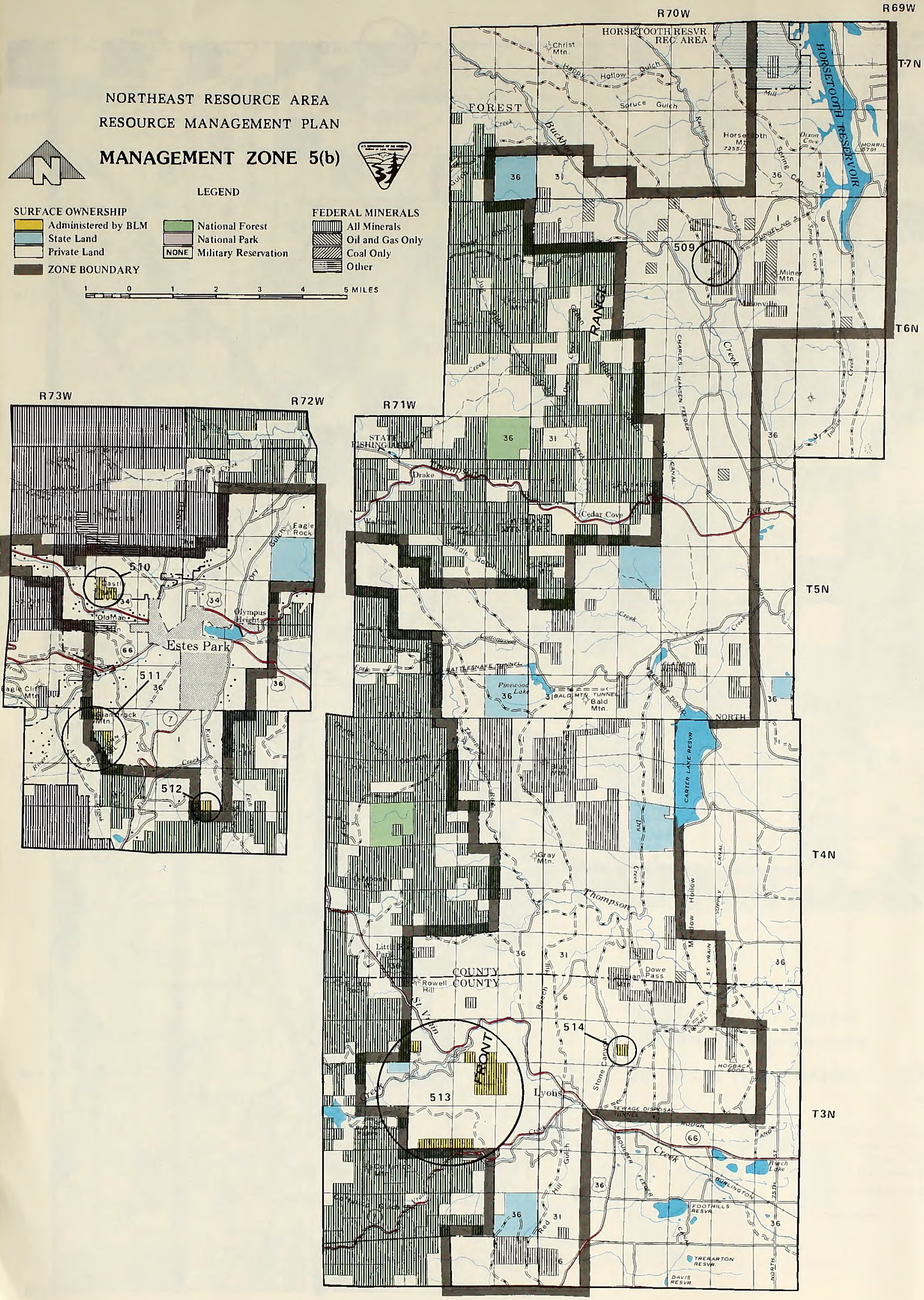
- 🟩 National Forest
- NONE National Park
- NONE Military Reservation

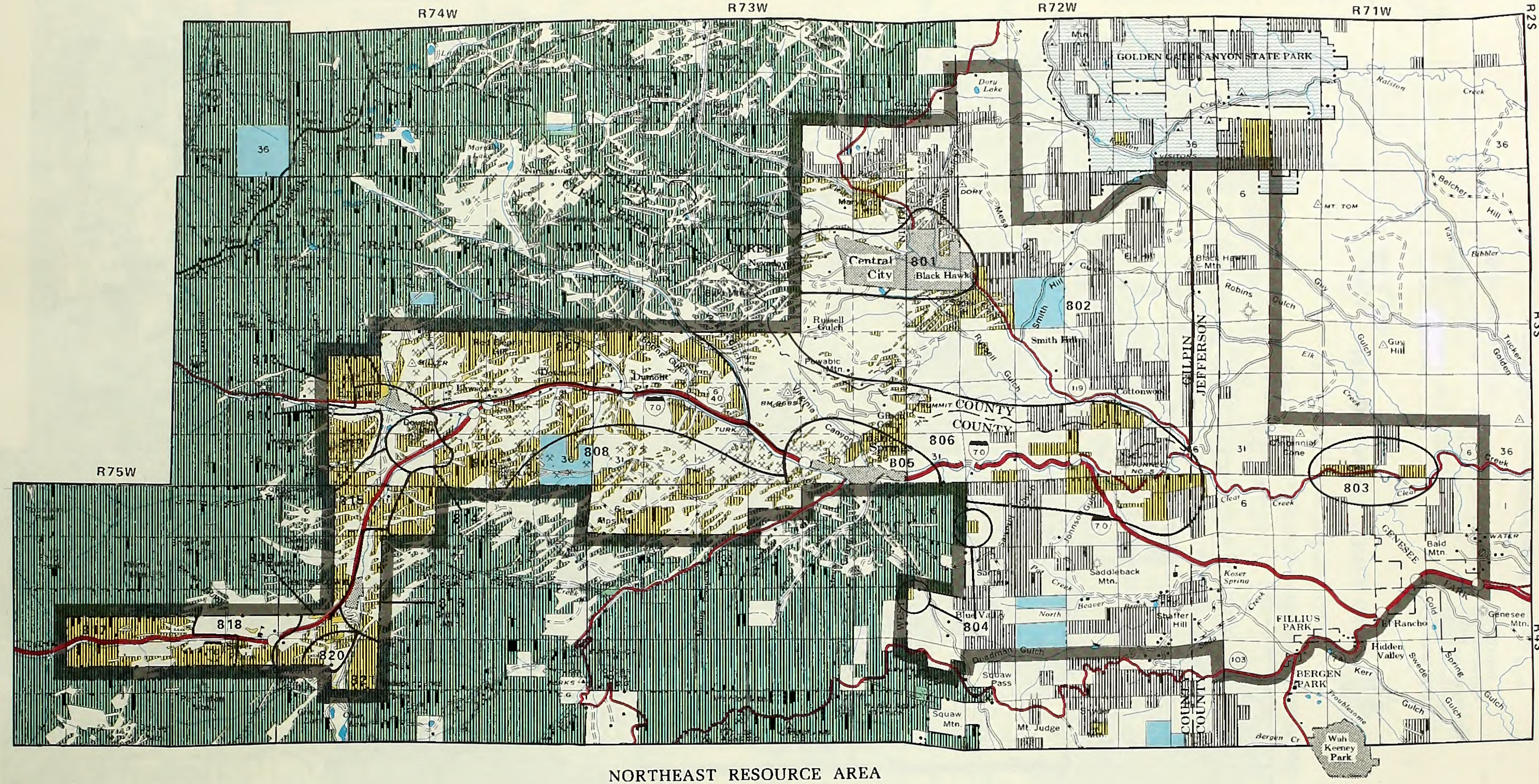
FEDERAL MINERALS
- ▥ All Minerals
- ▧ Oil and Gas Only
- ▨ Coal Only
- ▤ Other

1 0 1 2 3 4 5 MILES

NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 5(b)





NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 8

LEGEND

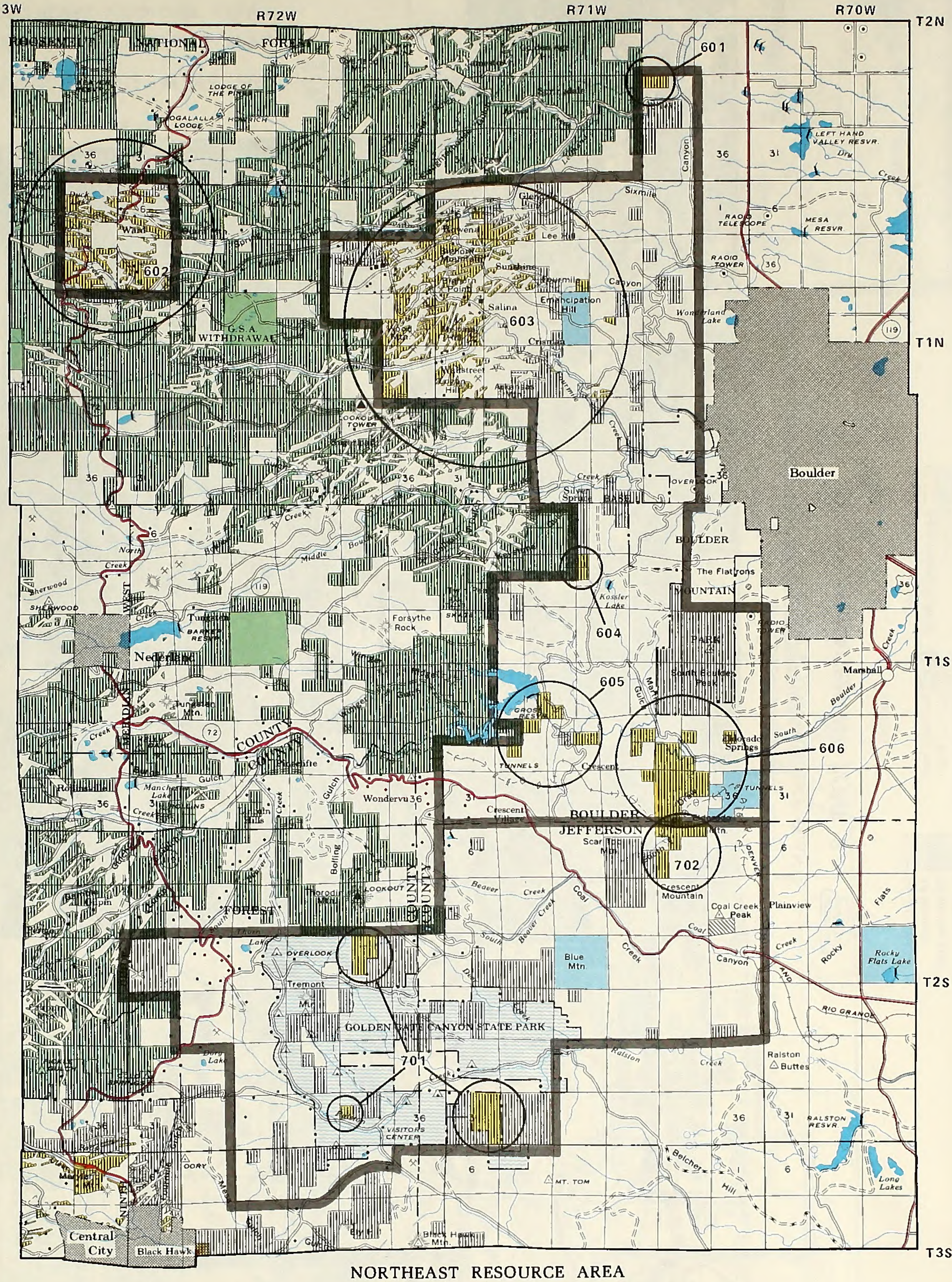
SURFACE OWNERSHIP

🟨	Administered by BLM
🟦	State Land
☐	Private Land
■	ZONE BOUNDARY
🟩	National Forest
NONE	National Park
NONE	Military Reservation

FEDERAL MINERALS

▥	All Minerals
▧	Oil and Gas Only
▨	Coal Only
▤	Other

1 0 1 2 3 4 5 MILES



NORTHEAST RESOURCE AREA

RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONES 6&7

LEGENO

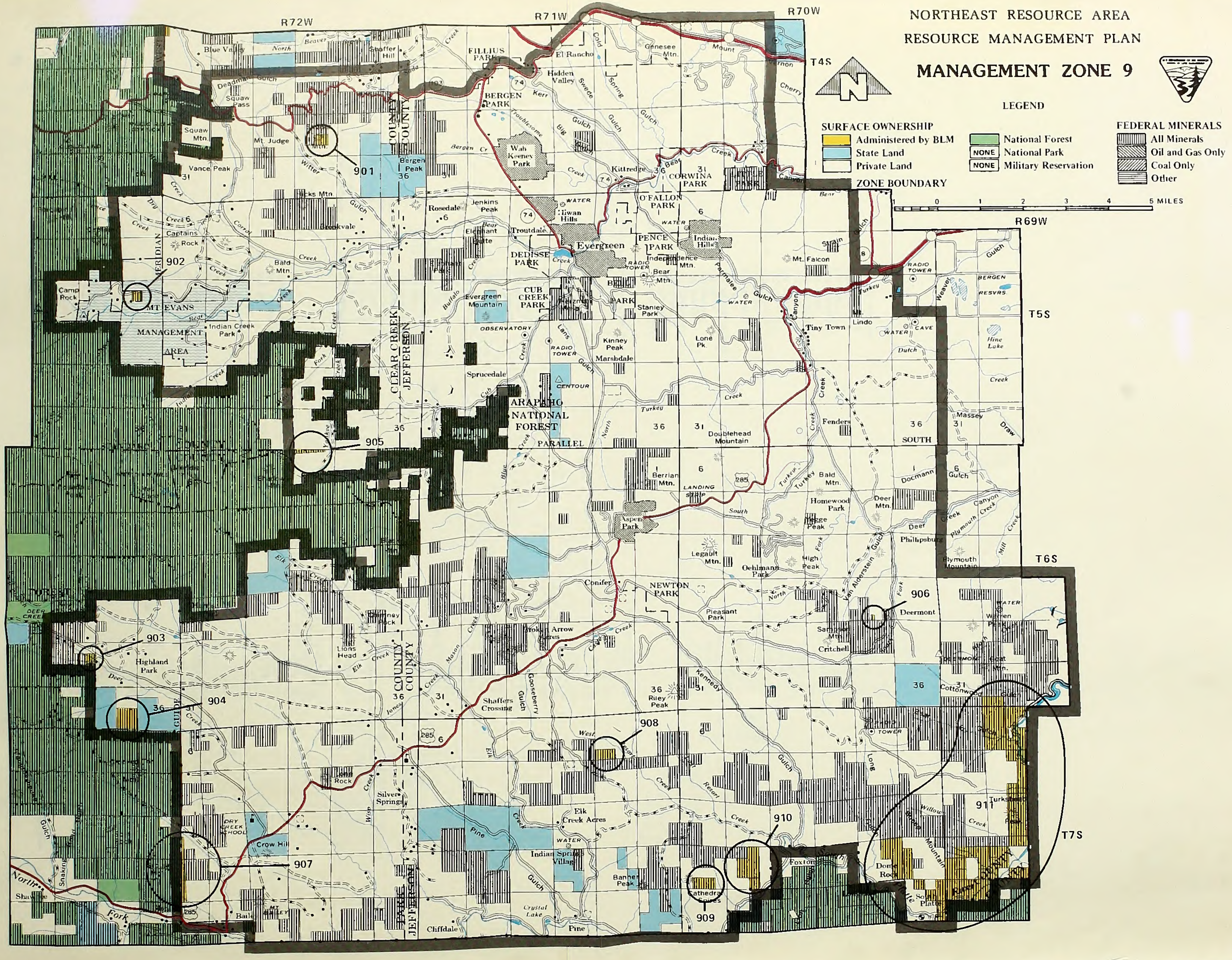
SURFACE OWNERSHIP
- 🟨 Administered by BLM
- 🟦 State Land
- ☐ Private Land
- 🟩 National Forest
- NONE National Park
- NONE Military Reservation
- ▬ ZONE BOUNOARY

FEDERAL MINERALS
- ▥ All Minerals
- ▨ Oil and Gas Only
- ▨ Coal Only
- ▤ Other

1 0 1 2 3 4 5 MILES

NORTHEAST RESOURCE AREA
RESOURCE MANAGEMENT PLAN

MANAGEMENT ZONE 9



Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
218. Steel Fork		1B Disposal/1				
T16S R57W		2C None/2				
S6	40.00	3B General				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural	14B SPM		14C Roaded Natural	14C Roaded Natural
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road.

219. Upper Adobe Cr.		1B Disposal/1				
T16S R54W		2C None/3				
S27	80.00	3B General				
T17S R56W		4D Nonforest				
S3	80.00	5A Leased/2			5A Leased/4	
S25	120.00	B Open			B Open	
T17S R55W		6B General				
S1	80.73	7B None				
S18	76.60	8B Stable/Slight				
	437.33	9A Open	9B Closed		9B Closed	
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 S3 and 25 leased only.
/3 Private road to all except S3.
/4 Grazing lease provisions included in disposal.

220. Wild Horse Cr.		1B Disposal/1				
T16S R47W		2A Existing/2				
S2	76.60	3B General				
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 County road.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
221. Cheyenne Wells		1B Disposal/1				
T16S R45W		2C None				
S4	65.23	3B General				
S22	79.13	4D Nonforest				
S28	78.90	5A Leased/3			5A Leased/5	5A Leased/5
	223.26	B Open			B Open	B Open
		6B General				
		7B None				
		8B Stable/Slight/2				
		C Moderate				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16B Class Ib/4				
		C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 S22 and 28 low hazard and S4 moderate.
/3 S22 and 28 leased only.
/4 S4 and 28 class II, S22 class Ib.
/5 Grazing lease provisions included in disposal.

Mgt. Unit	Acres	A	B	C	D	E
222. W. Pond Cr.		1B Disposal/1				
T17S R59W		2C None/2				
S35	320.00	3B General				
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road.

Mgt. Unit	Acres	A	B	C	D	E
223. Pond Cr.		1B Disposal/1				
T17S R58W		2C None/2				
S14	40.00	3B General				
S24	40.00	4D Nonforest				
T17S R57W		5B Open				
S18	40.00	6B General				
S19	26.20	7B None				
	146.20	8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Private road to S14 and 18 only.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
224. Lower Adobe Cr.		1A Retention/3		1B Disposal/2	1B Disposal/2	1B Disposal/2
T17S R54W		2A Existing/1				
S31	324.89	C None				
S32	160	3B General				
	484.89	4D Nonforest				
		5A Leased/4				
		B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class lV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 County road to S32, private road to S31.
/2 General.
/3 General multiple use values.
/4 S31 Leased

301. Reservoir No. 15		1A Retention/6		1B Disposal/5	1B Disposal/5	1B Disposal/5
T9N R69W		2C None/2	2B Needed		2C None/2	2C None/2
S4	200	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class lV				
		14C Roaded Natural				
		15D High				
		16C Class Il				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/4				
		C Yearlong				
		22-29A General				

/1 Rainbow trout, riparian, pheasants, geese, ducks, antelope,and mule deer.
/2 Private road.
/3 Closed within R/W C-0123766 only.
/4 No surface occupancy within R/W C-0123766; remainder, surface occupancy allowed between 7/1 and 3/31 only for waterfowl habitat protection.
/5 Colorado Division of Wildlife.
/6 Values: Wildlife, recreation.

302. Reservoir No. 2-		1A Retention/6		1B Disposal/5	1B Disposal/7	1B Disposal/7
Demel Lake		2C None/2	2B Needed		2C None/2	2C None/2
T9N R68W		3A Important/1	3A Important/1		3A Important/1	3A Important/1
S30	40	4D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class lII				
		14B SPM	14C Roaded Natural		14B SPM	14B SPM
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/4				
		C Yearlong				
		22-29A General				

/1 Warm water fisheries, riparian, pheasants, geese, ducks, and mule deer.
/2 Private road.
/3 Closed within R/W C-0123767 only.
/4 No surface occupancy within R/W C-0123767; remainder, surface occupancy allowed between 7/1 and 3/31 only for waterfowl habitat protection.
/5 General.
/6 Values: Wildlife, recreation.
/7 General with provisions for structures.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
303. Reservoir No. 5		1A Retention/6		1B Disposal/5	1B Disposal/7	1B Disposal/7
T8N R68W		2A Existing/2	2B Needed		2A Existing/2	2A Existing/2
S6	78.05	3A Important/1	3A Important/1		3A Important/1	3A Important
		4D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/4				
		C Yearlong				
		22-29A General				

/1 Warm water fisheries, riparian, pheasants, geese, ducks, and mule deer.
/2 Private road to southern end and county road to northeast corner.
/3 Closed within R/W C-0123767 only.
/4 No surface occupancy within R/W C-0123767; remainder, surface occupancy allowed between 7/1 and 3/31 only for waterfowl habitat protection.
/5 General.
/6 Values: Wildlife, recreation.
/7 General with provisions for structures.

Mgt. Unit	Acres	A	B	C	D	E
304. Reservoir No. 6		1A Retention/6		1B Disposal/5	1B Disposal/5	1B Disposal/5
T8N R68W		2C None/2	2B Needed		2C None/2	2C None/2
S6	80	3A Important/1	3A Important/1		3A Important/1	3A Important/1
S8	80	4D Nonforest				
	160	5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/4				
		C Yearlong				
		22-29A General				

/1 Warm water fisheries, riparian, pheasants, geese, ducks, and mule deer.
/2 Private road to the northern parcel only.
/3 Closed within R/W C-0123767 only.
/4 No surface occupancy within R/W C-0123767; remainder, surface occupancy allowed between 7/1 and 3/31 only for waterfowl habitat protection.
/5 General.
/6 Values: Wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
305. Windsor Reservoir &		1B Disposal/1	1A Retention/4			
Reservoir No. 8		2C None/3				
T8N R68W		3A Important/2	3A Important/2			
S18	80	4D Nonforest				
T8N R69W		5A Closed				
S24	40	6B General				
	120	7B None				
		8C Moderate				
		9B Closed				
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong				
		22-29A General				

/1 General.
/2 Warm water fisheries and waterfowl.
/3 Submerged land.
/4 Values: Wildlife.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
306. Black Hollow		1A Retention/3		1B Disposal/2	1B Disposal/2	1B Disposal/2
Reservoir		2A Existing/2				
T8N R67W		3A Important/1	3A Important/1		3A Important/1	3A Important/1
S34	80	4D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8C Moderate				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong				
		22-29A General				

/1 Warm water fisheries, riparian, pheasants, geese and ducks.
/2 Colorado Division of Wildlife - Fishing area.
/3 Values: Wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
307. Riverside Reservoir		1A Retention/7				1B Disposal/9
T5N R61W		2A Existing/3				
S31	240.45	C None				
T4N R62W		3A Important/2				
S1	291.63	4D Nonforest				
S2	40.00	5A Leased/1				
S11	200.00	C Closed				
S12	640.00	6B General				
S13	160.00	7B None				
T4N R61W		8B Stable/Slight				
S5	320.00	9A Open	9B Closed		9B Closed	9B Closed
S6	659.55	10B General				
S7	404.23	11A Open				
S8	120.00	12B General				
	3075.86	13C Class III				
		14C Roaded Natural	14B SPM/5		14B SPM/5	14B SPM/5
		15B State/local				
		16D Class III				
		17B None				
		18B Concern Area/6				
		C Closed				
		19B Concern Area				
		C Closed				
		20D None				
		21B Seasonal/4	21C Yearlong/8		21C Yearlong/8	21C Yearlong/8
		C Yearlong	E Unsuitable		E Unsuitable	E Unsuitable
		E Unsuitable				
		22-29A General				

/1 Sections 12 & 13 land above waterline leased, west of county road S8 closed, remainder open.
/2 Federal endangered bald eagle, state endangered white pelican nesting and feeding, warm water fisheries, water birds and riparian.
/3 County road to S8, public easement to S7, BLM administrative easement to S31 and S1 in progress, private road to S12 and 13.
/4 No lease of NESW of S12; NESW, NWSE, SWNESE, SWSW, & W1/2SESW of S6; and NWNW of S7; No surface occupancy within R/W C-0123882; SESESE of S1 and NENE of S13 surface occupancy allowed between 10/1 and 11/15 only for bald eagle and white pelican habitat protection; remainder, surface occupancy allowed between 10/1 and 3/15 only for white pelican habitat protection.
/5 Intensive recreation for wetland wildlife, fisheries, and beaches.
/6 S1/2NW of S5 and SESE of S12 closed by Executive order 5593 and right of way C-17321 to the location of mining claims for non-metaliferous minerals.
/7 Values: Wildlife, recreation, cultural.
/8 No lease of NESW of S12; NESW, NWSE, SWNESWE, SWSW, & W1/2SESW of S6; and NWNW of S7; Remainder no surface occupancy.
/9 Colorado Division of Wildlife.

Mgt. Unit	Acres	A	B	C	D	E
308. Empire Reservior		1A Retention/6	1B Disposal/7	1B Disposal/5	1B Disposal/8	1B Disposal/8
T3N R61W		2C None/2				
S1	120.91	3A Important/1				
T4N R61W		4D Nonforest				
S25	120.00	5B Open	5C Closed		5C Closed	5C Closed
S35	500.00	6B General				
T4N R60W		7B None				
S31	148.84	8B Stable/Slight				
	889.75	9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/3				
		C Yearlong				
		22-29A General				

/1 Federal endangered bald eagle, state endangered white pelican feeding, warm water fisheries, waterfowl and riparian.
/2 Private road, mostly submerged land with Colorado Disision of Wildlife access.
/3 No surface occupancy within right of way D-013729; remainder, surface occupancy allowed between 4/15 and 11/15 only for bald eagle habitat protection.
/4 Closed within right of way D-013729 only.
/5 Colorado Division of Wildlife-Wildlife Area.
/6 Values: Wildlife, recreation.
/7 Private, Irrigation Company.
/8 Onshore to DOW, offshore to private irrigation company.

Mgt. Unit	Acres	A	B	C	D	E
309. Jackson Reservoir		1A Retention/8	1A Retention/6	1B Disposal/7	1B Disposal/9	1B Disposal/9
T5N R60W		2A Existing/1	B Disposal			
S14	280	3A Important/2				
S15	440	4D Nonforest				
S22	600	5C Closed				
S23	350	6B General				
S27	120	7B None				
	1790	8B Stable/Slight				
		9B Closed				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural/3				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		C Closed/5				
		19C Closed				
		20D None				
		21C Yearlong/4				
		E Unsuitable				
		22-29A General				

/1 Jackson Lake State Park access.
/2 Bald eagle, white pelican feeding, warm water fisheries, waterfowl and riparian.
/3 Intensive recreation of fishing, wetland wildlife, and beach.
/4 No surface occupancy of N1/2SW, SESW, NWSE, S1/2SE of S14; S1/2NW, SWNE, SW, N1/2SE of S15; NW, NWSW, E1/2SW, SENE, SE of S22; NENW, S1/2NW, N1/2NE, SWNE, W1/2SENE, N1/2SW of S23; E1/2NW, NWNE of S27. No lease for SWSW of S14; S1/2SE of S15; N1/2NE, SWNE of S22; and NWNW of S23.
/5 SENW of S27 closed to location by recreation and public purposes lease C-19535.
/6 SENW of S27 to Colorado State Parks.
/7 General.
/8 Values: Wildlife, recreation.
/9 SENW of S27 to Colorado State Parks, remainder general.

310. Goodrich		1A Retention/6		1B Disposal/7	1B Disposal/7	1B Disposal/7
T4N R59W		2C None				
S6	48.13	3A Important/1				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18C Closed/3				
		19A Open/4	19B Concern Area		19B Concern Area	19B Concern Area
		B Concern Area				
		20D None				
		21A Standard/2	21B Seasonal/5		21B Seasonal/5	21B Seasonal/5
		B Seasonal				
		22-29A General				

/1 Federally endangered bald eagle, mule deer/white tail, small game, and riparian.
/2 N1/2NWNW S6 surface occupancy allowed between 4/15 and 11/15 only for bald eagle habitat protection, remainder standard stipulations. Known Geologic Structure for oil and gas.
/3 BLM order 12/22/49 withdrawn for Missouri Basin Reclamation Project.
/4 N1/2NWNW available but area of concern.
/5 Surface occupancy allowed between 4/15 and 11/15 only for bald eagle habitat protection.
/6 Values: Wildlife, reclamation, recreation.
/7 General (Reclamation withdrawal problem).

311. Bijou No. 2 Reservoir		1A Retention/6	1B Disposal/7	1B Disposal/8	1B Disposal/9	1B Disposal/9
T4N R59W		2C None/2				
S21	40	3A Important/1				
S22	40	4D Nonforest				
S27	200	5B Open	5C Closed		5C Closed	5C Closed
	280	6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM				
		15D High				
		16D Class III				
		17B None				
		18C Closed/5				
		19B Concern Area/4				
		C Closed				
		20D None				
		21B Seasonal/3				
		C Yearlong				
		22-29A General				

/1 Waterfowl, bald eagle, and riparian.
/2 Private road.
/3 No surface occupancy within right of way D-010670, E1/2NWSE, and the NWSESW of S27; surface occupancy allowed between 4/15 and 11/15 for bald eagle habitat protection outside of the right of way D-010670.
/4 Closed within right of way D-010670, E1/2NWSE, and NWSESW of S27 only.
/5 BLM order 12/22/49 withdrawn for Missouri Basin Reclamation Project.
/6 Values: Wildlife, reclamation.
/7 Private, Irrigation Company.
/8 General (Reclamation withdrawal problem).
/9 Onshore general, Offshore to private irrigation company.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
312. Snyder		1A Retention/3		1B Disposal/2	1B Disposal/2	1B Disposal/2
T4N R56W		2C None				
S14	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14A SPNM				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong				
		22-29A General				

/1 Mule deer/white tail, waterfowl, riparian, and small game.
/2 Colorado Division of Wildlife, Brush Wildlife Area.
/3 Values: Wildlife, recreation.

313. Prewitt Reservoir		1A Retention/7		1B Disposal/5	1B Disposal/5	1B Disposal/5
T4N R54W		2A Existing/4				
S1	315.40	2C None				
S12	320.00	3A Important/1	3A Important/1		3A Important/1	3A Important/1
	635.40	4D Nonforest				
		5B Open	5B Open/6		5B Open/6	5B Open/6
			C Closed		C Closed	C Closed
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area/3				
		C Closed				
		20D None				
		21B Seasonal/2				
		C Yearlong				
		22-29A General				

/1 Bald eagle, white pelican, waterfowl, warm water fisheries, and riparian.
/2 No surface occupancy in section 1 nor within R/W S-016189, remainder of section 12 surface occupancy allowed between 4/15 and 11/15 only for bald eagle habitat protection.
/3 Closed within R/W S-016189 and section 1 only.
/4 County road to S1 only.
/5 Colorado Division of Wildlife. State Wildlife Area.
/6 S1 closed for riparian area protection and offshore.
/7 Values: Wildlife, recreation.

314. Atwood		1A Retention/4	1B Disposal/5	1B Disposal/3	1B Disposal/5	1B Disposal/5
T7N R53W		2C None				
S26	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14B SPM	14A SPNM			
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/2	21C Yearlong			
		22-29A General				

/1 Mule deer/white tail, bald eagle, waterfowl, small game, and riparian.
/2 Surface occupancy allowed between 4/15 and 11/15 only for bald eagle habitat protection.
/3 General.
/4 Values: Wildlife, recreation.
/5 Colorado DOW.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
315. North Sterling		1A Retention/4		1B Disposal/3	1B Disposal/3	1B Disposal/3
Reservor		2A Existing/2				
S3	321.18	C None				
S4	80.00	3A Important/1	3A Important/1		3A Important/1	3A Important/1
S9	200.00	4D Nonforest				
S10	80.00	5B Open	5C Closed		5C Closed	5C Closed
	681.18	6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14B SPM/5		14B SPM/5	14B SPM/5
		15E Low				
		16C Class II				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong				
		22-29A General				

/1 Warm water fisheries, white pelican, waterfowl, mule deer and riparian.
/2 County road to all but 2 small parcels, in S3 and 10, of 6 total. Colorado Division of Wildlife access to all by boat.
/3 Colorado Division of Wildlife, Parks and Recreation, or local.
/4 Values: Wildlife, recreation.
/5 N1/2S3, S4, S9, and S10 only.

316. Dorsey		1A Retention/3	1B Disposal/5	1B Disposal/2	1B Disposal/5	1B Disposal/5
T11N R47W		2C None				
S28	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5B Open				
		6A Concern Area/6				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14A SPNM	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong	21B Seasonal/4		21B Seasonal/4	21B Seasonal/4
		22-29A General				

/1 Waterfowl, mule deer/white tail, small game, and riparian.
/2 General.
/3 Values: Wildlife, recreation.
/4 Surface occupancy allowed between 7/1 and 12/15 only for mule deer and waterfowl habitat protection.
/5 Colorado Division of Wildlife.
/6 Floodplain.

317. Julesburg Reservoir		1A Retention/4		1B Disposal/3	1B Disposal/3	1B Disposal/3
T11N R47W		2C None/2				
S18	159.24	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4D Nonforest				
		5C Closed				
		6B General				
		7B None				
		8B Stable/Slight				
		9B Closed				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14D Rural				
		15D High				
		16B Class Ib				
		17B None				
		18B Concern Area				
		19C Closed				
		20D None				
		21C Yearlong				
		22-29A General				

/1 Bald eagle, white pelican, waterfowl, and warm water fish.
/2 Boat access through Colorado Division of Wildlife.
/3 Private, Irrigation Company.
/4 Values: Wildlife, recreation.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
401. Crow Creek		1A Retention/6	1A Retention/4	1B Disposal/5	1B Disposal/5	1B Disposal/5
T11N R62W		2A Existing/2				
S12	120	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		40 Nonforest				
		5B Open	5C Closed			
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16B Class Ib/3				
		D Class III				
		17B None				
		18A Available	18B Concern Area		18B Concern Area	18B Concern Area
		19A Open	19B Concern Area		19B Concern Area	19B Concern Area
		20B Open				
		21A Standard	21D Open		21D Open	21D Open
		22-29A General				

/1 Antelope and raptors.
/2 County road.
/3 Class Ib east of county road and Class III west.
/4 U.S. Forest Service.
/5 Genera.
/6 Values: Wildlife.

402. George Creek		1A Retention/5	1A Retention/4	1B Disposal/3	1B Disposal/3	1B Disposal/3
T11N R55W		2C None				
S8	80	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		40 Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		130 Class IV	13C Class III		13C Class III	13C Class III
		14B SPM				
		15E Low				
		16B Class Ib				
		17A Concern Area/1				
		18B Concern Area				
		19B Concern Area				
		200 None				
		21A Standard	21D Open/2		21D Open/2	21D Open/2
		22-29A General				

/1 Isolated mesas hear High Plains Escarpment Geologic Feature.
/2 Raptors.
/3 General.
/4 USFS.
/5 Values: Wildlife, recreation.

403. Two Mile Creek		1B Disposal/1				
T10N R55W		2C None				
S21	40	3B General				
		40 Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		130 Class IV				
		14B SPM				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21A Standard				
		22-29A General				

/1 General.

404. Wildcat Creek		1B Disposal/1				
T6N R58W		2C None				
S26	40.00	3B General				
T5N R58W		40 Nonforest				
S22	40.00	5A Leased				
S23	80.00	6B General				
S27	80.00	7B None				
	240.00	8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15E Low				
		16C Class II				
		17B None				
		18A Available				
		19A Open				
		200 None				
		21A Standard				
		22-29A General				

/1 General.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
501. Wyoming Border		1B Disposal/1	1A Retention/4		1B Disposal/1	1B Disposal/1
T12N R70W		2C None				
S22	34.4	3A Important/2	3A Important/2		3A Important/2	3A Important
		4C Noncommercial				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/3				
		22-29A General				

/1 General.
/2 Mule deer and antelope.
/3 Surface occupancy allowed between 4/1 and 12/15 only for protection of mule deer.
/4 Values: Wildlife.

502. Cherokee Park		1B Disposal/1	1A Retention/8	1B Disposal/7	1B Disposal/1	1B Disposal/1
T11N R71W		2C None/6				
S30	121.55	3A Important/3	3A Important/3		3A Important/3	3A Important/3
S34	80.00	4C Noncommercial/4				
	201.55	D Nonforest				
		5A Leased/2				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/5				
		22-29A General				

/1 Colorado DOW.
/2 S34 leased.
/3 Mule deer, riparian, brown trout fishery, elk, and black bear.
/4 S30 forested.
/5 Surface occupancy allowed between 4/1 and 12/15 only, for protection of mule deer.
/6 Private road to S34.
/7 General.
/8 Values: Wildlife, recreation.

503. Rabbit Creek		1B Disposal/1	1A Retention/5	1B Disposal/4	1B Disposal/4	1B Disposal/4
T10N R71W		2C None				
S30	40	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4C Noncommercial				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13B Class II				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/3				
		22-29A General				

/1 General.
/2 Mule deer, black bear and elk.
/3 Surface occupancy allowed between 4/1 and 12/15 only, for protection of mule deer.
/4 Colorado DOW.
/5 Values: Wildlife.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	R	C	D	E
504. Livermore		1B Disposal/1				
T10N R70W		2A Existing/3				
S33	80	3B General				
		4D Nonforest				
		5A Leased/2				
		B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General				
		13C Class 11I				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 NESW S33 leased.
/3 County road.

505. Rufner Camp		1B Disposal/1				
T10N R70W		2C None				
S12	40	3A Important/2				
		4D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General				
		13D Class 1V				
		14C Roaded Natural				
		15D High				
		16C Class 11				
		17A Concern Area/4				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/3				
		22-29A General				

/1 General.
/2 Mule deer and antelope.
/3 Surface occupancy allowed between 4/1 and 12/15 only, for protection of mule deer.
/4 Rock outcrops showing monoclinal structure.

506. Hewett Gulch		1B Disposal/1	1A Retention/3		1A Retention/3	1A Retention/3
T9N R71W		2C None/4				
S34	160	3A Important/2	3A lmportant/2		3A lmportant/2	3A Important/2
		4C Noncommercial				
		D Nonforest				
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class 111				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class 111				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Mule deer, black bear and elk.
/3 US Forest Service.
/4 Walking access from US Forest Service.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
507. Owl Creek		1B Disposal/1	1A Retention/5		1B Disposal/1	1B Disposal/1
T8n R69W		2C None				
S6	168.9	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16B Class 1b/4				
		C Class II				
		D Class III				
		17A Concern Area/3				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21A Standard				
		22-29A General				

/1 General.
/2 Mule deer.
/3 Outcrop forming Dakota Hogback and presence of block-glide landslides.
/4 Morrison formation outcrop Class 1b.
/5 Values: Wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
508. Goat Hill		1B Disposal/1	1A Retention/6	1B Disposal/5	1B Disposal/5	1B Disposal/5
T8N R69W		2C None				
S19	44.78	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14D Rural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16C Class II				
		17A Concern Area/4				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/3				
		22-29A General				

/1 Colorado Division of Wildlife.
/2 Mule deer, osprey, brown trout fishery, and riparian, associated with the State Wildlife Area.
/3 Surface occupancy allowed between 4/1 and 12/15 only, for protection of mule deer.
/4 Tilted sedimentary rocks and formation boundaries.
/5 General.
/6 Values: Wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
509. Masonville		1A Retention/5		1C Specif. Review	1C Specif. Review	1B Retention/6
T6N R70W		2A Existing/3				
S10	3.60	C None				
S11	10.00	3A Important/2	3A Important/2		3A Important/2	3A Important/2
	13.60	4C Noncommercial				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural	14B SPM		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/4				
		22-29A General				

/1 General.
/2 Mule deer and elk.
/3 County road to S10.
/4 Surface occupancy allowed between 4/1 and 12/15 only, for protection of mule deer.
/5 Values: Mineral claims, wildlife.
/6 USFS.

Mgt. Unit	Acres	Issue Management Categories by Alternative A	B	C	D	E
510. Castle Mtn.		1A Retention/1	1A Retention/4	1B Disposal/3	1A Retention/5	1A Retention/6
T5N R73W		2C None				
S23	120	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4C Noncommercial				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13B Class II				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18C Closed				
		19C Closed				
		20D None				
		21D Open				
		22-29A General				

/1 Executive order - temporary withdrawal to transfer to Rocky Mountain National Park.
/2 Mule deer and elk.
/3 General.
/4 Values: Wildlife, recreation.
/5 National Park Service or retain by BLM.
/6 National Park Service.

Mgt. Unit	Acres	A	B	C	D	E
511. Gianttrack Mtn.		1B Disposal/1	1A Retention/3		1A Retention/3	1A Retention/3
T4N R73W		2C None				
S3	68.00	3A Important	3A Important/2		3A Important/2	3A Important/2
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 General.
/2 Mule deer and elk.
/3 USFS.

Mgt. Unit	Acres	A	B	C	D	E
512. Fish Creek		1B Disposal/3	1A Retention/1		1A Retention/1	1A Retention/1
T4N R72W		2C None				
S7	40	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21D Open				
		22-29A General				

/1 USFS.
/2 Mule deer and elk.
/3 General.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
513. St. Vrain		1A Retention/12	1A Retention/1	1B Disposal/2	1A Retention/13	1A Retention/1
T3N R71W		2C None/5	2B Needed/5		2B Needed/5	2B Needed/5
S10	40.35	3A Important/4	3A Important/4		3A Important/4	3A Important/4
S11	80.00	4B Unavailable/7				
S13	114.10	D Nonforest				
S14	246.44	5A Leased				
S22	120.00	6B General				
S23	80.26	7A Known/3				
	681.15	8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important/11		12A Important/11	12A Important/11
		13C Class III/6				
		D Class IV				
		14C Roaded Natural	14C SPM		14C SPM	14C SPM
		15D High				
		16C Class II				
		D Class III/9				
		17B None				
		18B Concern Area/10				
		C Closed				
		19B Concern Area				
		20D None				
		21B Seasonal/8				
		22-29A General				

/1 USFS.
/2 Colorado Division of Wildlife (Pwr. Site W/D problem).
/3 Spring in S10, 2 springs in S14.
/4 Bighorn sheep, black bear, elk, bald eagle, beaver, mule deer and turkey.
/5 S10 private road. Walking access from US Forest Service.
/6 S10, 11, 13 and parts of S14, 22, 23 Class III.
/7 All sections mixed forest and nonforest.
/8 Surface occupancy allowed between 7/1 and 12/15 only, for protection of bighorn sheep in S10 and between 7/1 and 12/15 only, for protection of elk and bighorn sheep elsewhere.
/9 Class II in S13, 23 and part of 14.
/10 S10 C-17321 public water reserve - closed to mineral entry for non-metaliferous minerals only; S11 SESW Executive Order 3/25/1919 withdrawn for powersite reserve 715, SESE also C-0124036 classified for R&PP, S13 C-0125036 classified for R&PP, lot 3 also Secretarial Order 9/17/1943 power site classification 343, lots 1 & 2 also withdrawn for powersite reservation 356 by Executive Order 5/27/1913; S22,S1/2SE and S23 Executive Order 3/21/1914 withdrawal for Power Site Reserve 427; S14, lots 1,6,& 7 withdrawn for powersite reserve 356 by Executive Order 5/27/1913.
/11 S13 & 14 only.
/12 Values: Wildlife, water source, visual, recreation, Pwr. Site Withdrawal.
/13 S10, 22, & 23 to the USFS, remainder BLM.

Mgt. Unit	Acres	A	B	C	D	E
514. Stone Canyon		1A Retention/4	1A Retention/1	1B Disposal/6	1A Retention/4	1A Retention/1
T3N R70W		2A Existing/5				
S8	40	3A Important/2				
		4D Nonforest				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		14C Roaded Natural				
		15D High				
		16C Class II				
		17A Concern Area/3				
		18A Available	18B Concern Area		18B Concern Area	18B Concern Area
		19A Open	19B Concern Area		19B Concern Area	19B Concern Area
		20D None				
		21A Standard				
		22-29A General				

/1 USFS.
/2 Elk and mule deer.
/3 Crest of Dakota Hogback.
/4 Values: Wildlife, Open Space.
/5 County Road.
/6 General.

Mgt. Unit	Acres	A	B	C	D	E
601. Left Hand Cr.		1A Retention/1		1B Disposal/4	1B Disposal/4	1B Disposal/4
T2N R71W		2C None/5	2B Needed			
S26	80	3A Important/3	3A Important/3		3A Important/3	3A Important/3
		4B Unavailable				
		5B Open	5C Closed		5C Closed	5C Closed
		6A Concern Area/2				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18C Closed/1				
		19C Closed				
		20D None				
		21A Standard				
		22-29A General				

/1 Power site reservation.
/2 Boulder Municipal Watershed.
/3 Mule deer and elk.
/4 Boulder County Parks (powersite reservation problem).
/5 Walking access from US Forest Service.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
602. Ward		1A Retention/11	1A Retention/8	1B Disposal/9	1B Disposal/9	1A Retention/8
T1N R73W		2C None/7	2B Needed	C Specif. Review	C Specif. Review	
S1	200	3A Important/4	3A Important/4		3A Important/4	3A Important/4
S12	250	4A Available/6				
T1N R72W		B Unavailable				
S6	200	C Noncommercial				
S7	200	D Nonforest				
	850	5B Open	5C Closed		5C Closed	5C Closed
		6A Concern Area/2	6A Concern Area/2		6A Concern Area/2	6A Concern Area/2
		7A Known/3				
		8A Problem Area				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		D Class IV				
		14D Rural/5	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15A NRHP/5				
		16D Class III				
		17B None				
		18B Concern Area/1				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open/10g				
		E Closed				
		22-29A General				

/1 SENW S6 and lot 9 closed to location of nonmetaliferous minerals by Public Water Reserve.
/2 Boulder Municipal Watershed.
/3 Three springs of importance.
/4 Elk, Lefthand Creek riparian and brook trout.
/5 Switzerland Mt. NRHP, Historic Rail Road, ORV closure.
/6 Portions in all four sections.
/7 Partial access exists.
/8 USFS.
/9 General disposal of appropriate tracts, mining claim policy.
/10 S1/2S1/2 S1 and N1/2N1/2 S12 closed within incorporated town of Ward.
/11 Values: Wildlife, forestry, watershed, water sources, recreation, NRHP, locatable minerals, open space.

603. Gold Hill		1A Retention/9	1A Retention/7	1B Disposal	1B Disposal	1A Retention/7
T1N R72W		2C None/6	2B Needed	C Specif. Review/8	C Specif. Review/8	
S11	20	3A Important/3	3A Important/3		3A Important/3	3A Important/3
S12	150	4A Available				
S13	480	B Unavailalbe				
S14	6	5B Open	5C Closed		5C Closed	5C Closed
S24	200	6A Concern Area/2	6A Concern Area/2		6A Concern Area/2	6A Concern Area/2
T1N R71W		B General				
S5	115	7B None				
S6	110	8B Stable/Slight				
S7	285	9A Open				
S8	160	10A Cooperative				
S9	50	11A Open				
S15	20	12B General	12A Important		12A Important	12A Important
S16	2	13C Class III				
S17	5	D Class IV				
S18	300	14C Roaded Natural	14B SPM		14B SPM	14B SPM
S19	170	D Rural	C Roaded Natural		C Roaded Natural	C Roaded Natural
S20	5	15B State/Local				
S21	6	16D Class III				
S22	16	17B None				
	2100	18B Concern Area/1				
		C Closed				
		19B Concern Area				
		20D None				
		21A Standard				
		B Seasonal/4				
		D Open/5				
		22-29A General				

/1 Lot 49 S21 closed by C-083388 classification for recreation and public purposes, portions of S18 and 19 closed by C-083523 classification.
/2 North portion is in Boulder Municipal Watershed. Four short lengths of floodplains totaling 1 1/2 miles.
/3 Elk, mule deer, Left Hand Creek riparian, Fourmile Canyon riparian.
/4 7/1 - 11/15 surface occupancy in S22, T1N R71W for Bighorn Sheep protection.
/5 All in T1N R72W.
/6 Partial access exists.
/7 USFS.
/8 General disposal of appropriate tracts, Mining claim policy.
/9 Values: Wildlife, forestry, watershed, recreation, locatable minerals, open space.

604. Kossler Lake		1A Retention/1	1A Retention/5	1B Disposal/7	1A Retention/5	1A Retention/5
T1S R71W		2C None/6	2B Needed			
S10	80	3A Important/3				
		4B Unavailable				
		5B Open	5C Closed		5C Closed	5C Closed
		6A Concern Area/2				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17B None				
		18A Available/4	18B Concern Area/4		18B Concern Area/4	18B Concern Area/4
		C Closed	C Closed		C Closed	C Closed
		19A Open	19B Concern Area		19B Concern Area	19B Concern Area
		B Concern Area				
		20D None				
		21A Standard				
		22-29A General				

/1 Values: Power site reservation of the SWNW - 40 acres; watershed, open space.
/2 Secondary stream to the Boulder Municipal Watershed.
/3 Elk, mule deer and black bear.
/4 SWNW - S10 closed only.
/5 USFS.
/6 Walking access from US Forest Service.
/7 Boulder County, adjacent to County Park.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
605. Gross Reservoir		1A Retention/1	1A Retention/6	1B Disposal/5	1B Disposal/5	1B Disposal/5
T1S R71W		2A Existing/4	2B Needed			
S21	127.66	3A Important/3				
S28	77.91	4A Available				
S29	116.22	B Unavailable				
	321.79	5B Open	5C Closed		5C Closed	5C Closed
		6A Concern Area/2	6A Concern Area/2		6A Concern Area/2	6A Concern Area/2
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		D Class IV				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		D Rural	D Rural		D Rural	D Rural
		15D High				
		16D Class III				
		17B None				
		18C Closed/1				
		19B Concern Area				
		20D None				
		21A Standard				
		22-29A General				

/1 Power site reservation of S21, 28 and N1/2NE of S29; power site classification for NESW of S29 (37.29 acres). Values: wildlife, open space, water quality, forestry, recreation.
/2 Boulder Municipal Watershed. Two short lengths of floodplain totaling 1/2 mile.
/3 Elk, mule deer, balck bear, golden eagle, riparian, and rainbow trout.
/4 County road and walking from US Forest Service.
/5 Boulder county for inclusion in county park if acceptable to the Federal Energy Regulatory Commission. (Currently under R&PP application).
/6 USFS.

606. Boulder Cr.		1A Retention/1		1B Disposal/3	1B Disposal/13	1B Disposal/13
T1S R71W		2A Existing/14	2A Existing			
S25	39.89	C None	B Needed			
S26	248.73	3A Important/3	3A Important/3		3A Important/3	3A Important/3
S27	122.29	4B Unavailable				
S34	39.71	D Nonforest				
S35	484.28	5B Open	5C Closed		5C Closed	5C Closed
	934.90	6A Concern Area/2	6A Concern Area/2		6A Concern Area/2	6A Concern Area/2
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13B Class II/4				
		C Class III				
		D Class IV				
		14B SPM/5				
		C Roaded Natural				
		15D High				
		16C Class II/15				
		D Class III				
		17A Concern Area/9				
		18B Concern Area/11				
		C Closed				
		19B Concern Area	19B Concern Area/12 C Closed		19B Concern Area/12 C Closed	19B Concern Area/12 C Closed
		20D None				
		21B Seasonal/10				
		22-29A General				

/1 S25 and SWSW S26 classified power site, power site reservation SWNE and SW of S26, and N1/2SE of S27. Values: water quality, wildlife, recreation, open space, salable minerals.
/2 Boulder Municipal Watershed. Three short lengths of floodplain totaling 1 mile.
/3 Mule deer, black bear, golden eagle, rainbow trout, and riparian.
/4 SWNW - S26, S25, portion of S35 Class II.
/5 All 1/4 mile south of creek SPM.
/9 Eldorado Canyon geolgic feature.
/10 Surface occupancy allowed in S25 between 7/1 and 12/15 for raptor and mule deer protection; and in S26, 27, 34 and 35 between 4/1 and 12/15 for mule deer protection.
/11 S25; S26; S27 S1/2NE; closed only.
/12 S25 closed.
/13 Boulder County for inclusion in county park if acceptable to the Federal Energy Regulatary Commission. (Currently under R&PP application).
/14 County road to portions, walk to most.
/15 S25 Class III only.

701. Golden Gate		1B Disposal/1				
State Park		2C None				
T2S R71W		3A Important/2				
S31	280	4A Available				
		B Unavailable				
T2S R72W		5B Open	5C Closed		5C Closed	5C Closed
S14	200	6B General				
S35	40	7B None				
	520	8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17B None				
		18C Closed				
		19B Concern Area	19C Closed		19C Closed	19C Closed
		20D None				
		21D Open				
		22-29A General				

/1 Classified for disposal to the Golden Gate Canyon State Park and application for R&PP.
/2 Elk, mule deer, and riparian (S14).

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	0	E
702. Eldorado Mtn.		1A Retention/6				1A Retention/7
T2S R71W		2C None	2B Needed		2B Needed	
S2	283.60	3A Important/2	3A Important/2		3A Important/2	3A Important/2
		4B Unavailable				
		D Nonforest				
		5B Open	5C Closed		5C Closed	5C Closed
		6A Concern Area/1				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General				
		11A Open				
		12B General				
		130 Class IV				
		14B SPM				
		150 High				
		16C Class II/5				
		0 Class III				
		17A Concern Area/3				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21B Seasonal/4				
		22-29A General				

/1 Secondry stream to the Boulder Municipal Watershed.
/2 Mule deer, black bear, mountain lion, and riparian.
/3 Eldorado Shear Zone geologic hazard in Lot 4.
/4 4/1-12/15 seasonal occupancy for mule deer habitat protection.
/5 Portion of Lot 2 Class II only.
/6 Values: wildlife, water quality, recreation, open space, salable minerals.
/7 USFS.

801. Central City/		1A Retention/4		1C Specif. Review	1C Specif. Review	1A Retention/6
Black Hawk		2A Existing/2				
T3S R72W		3A Important/1	3A Important/1		3A Important/1	3A Important/1
S6	0.45	4B Unavailable				
S7	33.67	0 Nonforestle				
T3S R73W		5B Open				
S11	108.95	6A Concern Area/3	6A Concern Area/3		6A Concern Area/3	6A Concern Area/3
S12	72.80	7B None				
	215.87	8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10B General	10A Cooperative		10A Cooperative	10A Cooperative
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II				
		14E Urban				
		15A NRHP	15A NRHP		15A NRHP	15A NRHP
		160 Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		200 None				
		210 Open				
		22-29A General				

/1 Mule deer.
/2 Scattered tracts, many with county road access.
/3 Pollution problem.
/4 Values: wildlife, water quality, open space, minerals, cultural, scenic.
/5 Mining claim policy.
/6 USFS.

802. Gilpin		1A Retention/7		1B Oisposal/8	1B Disposal/8	1A Retention/10
T2S R72W				C Specif. Review	C Specif. Review	
S31	31.58	2A Existing/5				
S32	2.00	C None				
		3A Important/4				
T3W R72W		4A Available				
S8	37.50	B Unavailable				
		0 Nonforest				
S17	309	5A Leased/3				
S18	202.41	B Open				
S20	40	6A Concern Area/1				
S21 &		7A Known/2				
S22	1.19	8B Stable/Slight				
T3S R73W		9A Open	9B Closed		9B Closed	9B Closed
S1	325.39	10B General	10A Cooperative		10A Cooperative	10A Cooperative
S2	146.45	11A Open				
S13	92.21	12B General	12A Important/6		12A Important/6	12A Important/6
S14	53.99	13B Class II/6				
		C Class III				
S23	123.88	D Class IV				
S24	200	140 Rural/9	14C Roaded Natural/9		14C Roaded Natural/9	14C Roaded Natural/9
	1565.60	15B State/Local				
		160 Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		200 None				
		21D Open				
		22-29A General				

/1 North Fork Clear Creek Municipal Watershed, 4 floodplain sections along the North Fork Clear Creek, pollution problem.
/2 Spring in S18 T3S R72W.
/3 Three leases covering 600 acres.
/4 Mule deer except north of highway 119 and Central City S1, 31 and 36, four sections of riparian on Russell Gulch, and North Fork Clear Creek (and tributaries).
/5 Some tracts with existing roads but closed, others with county road access.
/6 Class II corridor along highway 119 and Maryland Mountian.
/7 Values: wildlife, forestry, water quality, water source, recreation, scenic, minerals, open space.
/8 Mining claim policy.
/9 Trail riding permit.
/10 USFS.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	0	E
803. Clear Creek		1A Retention/7		1B Disposal/1	1B Disposal/1	1B Disposal/1
T3S R71W		2A Existing/4				
S33	160	C None				
S34	80	3A Important/3	3A Important/3		3A Important/3	3A Important/3
	240	4B Unavailable				
		C Noncommercial				
		0 Nonforeat				
		5B Open				
		6A Concern Area/2				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13C Class III				
		14D Rural				
		15C Limited				
		160 Class III				
		17A Concern Area/5				
		18B Concern Area				
		19B Concern Area				
		200 None				
		21B Seasonal/6				
		22-29A General				

/1 Jefferson County.
/2 1 mile floodplain along Clear Creek, pollution problem.
/3 Turkey, mule deer, riparian, and brown trout.
/4 County road to the S33 tract, none to S34.
/5 Clear Creek Canyon Geologic Feature of importance.
/6 Surface occupancy between 8/1 and 3/31 only for protection of turkey habitat.
/7 Values: open space, wildlife, eater quality, scenic.

Mgt. Unit	Acres	A	B	C	0	E
804. Sante Fe Mtn.		1A Retention/4	1A Retention/5	1B Disposal/6	1A Retention/5	1A Retention/5
T4S R72W		2C None				
S5	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
S18	19.76	4B Unavailable				
	59.76	5B Open				
		6A Concern Area/3	6A Concern Area/3		6A Concern Area/3	6A Concern Area/3
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General	12A Important/2		12A Important/2	12A Important/2
		13B Class II/2				
		C Class III				
		14D Rural	14B Roaded Natural		14B Roaded Natural	14B Roaded Natural
		150 High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		200 None				
		21D Open				
		22-29A General				

/1 Mule deer and elk.
/2 S5 is Class II.
/3 Secondary watershed to Clear Creek pollution problem.
/4 Values: wildlife, water quality, open space, scenic.
/5 USFS.
/6 General.

Mgt. Unit	Acres	A	B	C	0	E
805. Idaho Spr.		1A Retention/4		1C Specif. Review	1C Specif. Review	1A Retention/6
T3S R73W		2A Exiting/2				
S25	40	0 None				
S26	40	3A Important/1				
S34	10	4B Unavailable				
S35	150	D Nonforest				
S36	300	5B Open				
	540	6A Concern Area/3				
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14E Urban				
		15C Limited				
		160 Class III				
		17B None				
		18B Concern Area	18B Concern Area		18B Concern Area	18B Concern Area
		19B Concern Area				
		20D None				
		210 Open				
		22-29A General				

/1 Mule deer, mountain lion, and one short riparian section in Virginia Canyon.
/2 County road access to much of the land, scattered tracts lacking roads.
/3 Pollution problem.
/4 Values: wildlife, Water quality, scenic, minerals, open space.
/5 Mining claim policy.
/6 USFS.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
806. County Divide		1A Retention/1		1B Disposal/8	1A Retention/10	1A Retention/11
T4S R72W				C Specif. Review/9	C Specif. Review/9	
S1	80	2A Existing/5				
S2	230	C None				
S3	80	3A Important/4				
T3S R72W		4B Unavailable				
S26	145	C Noncommercial				
S27	195	D Nonforest				
S30	150	5A Leased/3	5A Leased/3		5A Leased/3	5A Leased/3
S32	80	B Open	B Open		B Open	B Open
S33	120	6A Concern Area/2				
S34	175	7B None				
T3S R73W		8B Stable/Slight				
S21	150	9A Open	9B Closed		9B Closed	9B Closed
S22	145	10A Cooperative				
S23	5	11A Open				
S25	145	12B General	12A Important/6		12A Important/6	12A Important/6
S26	45	13B Class II/6				
S27	45	C Class III				
S34	20	D Class IV				
S35	5	14D Rural				
S26	30	15D High				
	1745	16D Class III				
		17A Concern Area/7				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Values: wildlife, livestock, minerals, open space, water power withdrawal, scenic.
/2 Three floodplain sections along Clear Creek, pollution problem.
/3 One lease covering 500 acres.
/4 Mule deer, mountain lion north of Idaho Springs, and Clear Creek riparian and brown trout.
/5 County road access to most tracts, S26, 27 and 32 lack roads, scattered tracts lack roads.
/6 Class II except the east side of summit peak (class IV) and York Gulch scattered tracts (class III).
/7 Floyd Hill Slump Geologic Hazard and Clear Creek Canyon Geologic Feature of importance east of Idaho Springs.
/8 East of Idaho Springs - General (water power withdrawal problem).
/9 West of Idaho Springs - Mining claim policy.
/10 East of Idaho Springs - BLM same values a/1.
/11 USFS.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
807. Silver to Fall Cr.		1A Retention/8		1B Disposal/9	1B Disposal/9	1A Retention/11
T3S R73W		2A Existing/4		C Specif. Review	C Specif. Review/10	
S19	320	C None				
S20	310	3A Importatnt/3	3A Important/3		3A Important/3	3A Important/3
S21	200	4A Available				
S28	140	B Unavailable				
S29	100	C Noncommercial				
S30	10	D Nonforest				
T3S R74W		5A Leased/2				
S20	40	B Open				
S21	240	6A Concern Area/7	6A Concern Area/7		6A Concern Area/7	6A Concern Area/7
S22	435	7B None				
S23	410	8B Stable/Slight				
S24	275	9A Open	9B Closed		9B Closed	9B Closed
S27	70	10A Cooperative				
S28	145	11A Open				
	2695	12B General	12A Important/5		12A Important/5	12A Important/5
		13B Class II/5	13B Class II/5		13B Class II/5	13B Class II/5
		14D Rural/6				
		15B State/Local/6				
		D High/1				
		16D Class III				
		17B None				
		18B Concern Area/1	18B Concern Area/1		18B Concern Area/1	18B Concern Area/1
		C Closed	C Closed		C Closed	C Closed
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 North of Dumont 40 acres are classified for R&PP lease closed to location.
/2 One lease covering 1100 acres.
/3 Mule deer, bighorn sheep, elk calving, two Red Tail Hawk nesting areas, mountain lion on the western section, and 3 riparian sections: Mill Creek, Spring Gulch, and Fall River; Brook Trout in Mill and Fall Creeks.
/4 Some county road access, Elephant Hill area lacking access roads.
/5 Class II except some west of Mill Creek near Red Elephant Hill.
/6 Historic Arastra just north of Dumont and important fisheries in Mill Creek.
/7 Pollution problem.
/8 Values: wildlife, livestock, water quality, open space, scenic, minerals.
/9 General - small tracts without mining claims.
/10 Mining claim policy.
/11 USFS.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
808. Alps Mtn.		1A Retention/6		1B Disposal/7	1B Disposal/7	1A Retention/9
T3S R74W		2A Existing/2		C Specif. Review/8	C Specif. Review/8	
S35	100	C None				
S36	90	3A Important/1				
T3S R73W		4A Available	4A Available		4A Available	4A Available
S30	40	B Unavailable	B Unavailable		B Unavailable	B Unavailable
S31	230	D Nonforest	D Nonforest		D Nonforest	D Nonforest
S32	145	5B Open				
S33	140	6A Concern Area/5	6A Concern Area/5		6A Concern Area/5	6A Concern Area/5
S34	30	7B None				
S35	20	8B Stable/Slight				
T4S R73W		9A Open	9B Closed		9B Closed	9B Closed
S3	100	10A Cooperative				
S4	260	11A Open				
S5	340	12B General	12A Important/3		12A Important/3	12A Important/3
S6	300	13B Class II/3	13B Class II/3		13B Class II/3	13B Class II/3
	1795	14D Rural				
		15F None				
		16D Class III				
		17A Concern Area/4				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Elk, deer, turkey, riparian along Trail Creek.
/2 Some county road access, scattered tracts with existing roads but closed.
/3 Class II except area between Trail Creek and Alps road.
/4 Landslide geologic hazard deposits between Trail Creek and Alps Mtn.
/5 Secondry watershed to Clear Creek pollution problem.
/6 Values: wildlife, forestry, water quality, open space, scenic, mineral, recreation.
/7 General - small tracts without mining claims.
/8 Mining claim polciy.
/9 USFS.

Mgt. Unit	Acres	A	B	C	D	E
809. Silver Mtn.		1A Retention/4		1B Disposal/5	1B Disposal/5	1A Retention/7
T3S R73W		2A Existing/3		C Specif. Review/6	C Specif. Review/6	
S28	100	C None				
S29	180	3A Important/2				
S30	160	4A Available				
S33	30	B Unavailable				
S34	50	C Noncommercial				
T3S R74W		D Nonforest				
S25	340	5B Open				
S26	170	6A Concern Area/1				
S27	50	7B None				
S33	70	8B Stable/Slight				
S34	400	9A Open	9B Closed		9B Closed	9B Closed
S35	340	10A Cooperative				
S36	60	11A Open				
T4S R74W		12B General	12A Important		12A Important	12A Important
S4	460	13B Class II				
S4	2450	14D Rural				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Two floodplain sections along Clear Creek, pollution problem.
/2 Mule deer, bighorn, and Clear Creek riparian, brown and rainbow trout.
/3 A little county road access, some closed existing roads, scattered tracts lack roads.
/4 Values: forestry, wildlife, water quality, open space, minerals.
/5 General - small tracts without mining claims.
/6 Mining claim policy.
/7 USFS.

Mgt. Unit	Acres	A	B	C	D	E
810. Empire		1A Retention/3	1A Retention/5	1C Specif. Review/6	1A Retention/5	1A Retention/5
T3S R74W		2A Existing/2				
S28	60	C None				
S29	150	3A Important/1	3A Important/1		3A Important/1	3A Important/1
	210	4A Available	4A Available		4A Available	4A Available
		B Unavailable	B Unavailable		B Unavailable	B Unavailable
		D Nonforest	D Nonforest		D Nonforest	D Nonforest
		5B Open				
		6A Concern Area/4	6A Concern Area/4		6A Concern Area/4	6A Concern Area/4
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14D Rural				
		15C Limited				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mule deer and bighorn sheep.
/2 County road.
/3 Values: wildlife, water quality, forestry, open space, scenic, minerals.
/4 Secondry watershed to Clear Creek pollution problem.
/5 USFS.
/6 Mining claim policy.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
811. Empire NW		1A Retention/4	1A Retention/5	1C Specif. Review	1A Retention/5	1A Retention/5
T3S R74W		2B Needed/2				
S20	170	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4A Available				
		B Unavailable				
		D Nonforest				
		5B Open				
		6A Concern Area/3	6A Concern Area/3		6A Concern Area/3	6A Concern Area/3
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class Il				
		14D Rural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mule deer, mountain lion and bighorn sheep.
/2 Access acquisition in progress.
/3 Secondary watershed to Clear Creeek pollution problem.
/4 Values: wildlife, forestry, water quality, open space, minerals, recreation.
/5 USFS.
/6 Mining claim policy.

Mgt. Unit	Acres	A	B	C	D	E
812. Mad Creek		1A Retention/6	1A Retention/4	1C Specif. Review/5	1A Retention/4	1A Retention/4
T3S R74W		2B Needed/3				
S20	140	3A Important/2	3A Important/2		3A Important/2	3A Important/2
S29	140	4A Available				
	280	B Unavailable				
		D Nonforest				
		5B Open				
		6A Concern Area/1	6A Concern Area/1		6A Concern Area/1	6A Concern Area/1
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class Il				
		14D Rural				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area	18B Concern Area		18B Concern Area	18B Concern Area
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mad Creek Municipal Watershed.
/2 Mule deer and bighorn sheep.
/3 Access acquisition in progress.
/4 USFS.
/5 Mining claim polciy.
/6 Values: wildlife, water quality, forestry, open space, scenic, minerals.

Mgt. Unit	Acres	A	B	C	D	E
813. Lincoln Mtn.		1A Retention/7	1A Retention/5	1C Specif. Review	1C Specif. Review	1A Retention/5
T3S R74W		2C None/2				
S29	160	3A Important/1				
S32	390	4A Availalble				
	550	B Unavailable				
		D Nonforest				
		5B Open				
		6A Concern Area/4				
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class Il				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17A Concern Area/3				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Bighorn sheep, riparian along Bard Creek and Brook trout.
/2 Private roads.
/3 Landslide geologic hazard deposits between Lincoln Mtn. and Bard and West Fork Clear Creeks.
/4 Secondary watershed to Clear Creek pollution problem.
/5 USFS.
/6 Mining claim policy.
/7 Values: wildlife, forestry, water quality, open space, scenic, minerals.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
814. Douglas Mtn.		1A Retention/6		1C Specif. Review	1C Specif. Review	1A Retention/7
T3S R74W		2C None				
S28	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
S33	100	4B Unavailable				
S34	60	D Nonforest				
	200	5B Open				
		6A Concern Area/4				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II				
		14D Rural				
		15D High				
		16D Class III				
		17A Concern Area/2				
		18B Concern Area/3				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Bighorn sheep, mule deer, Clear Creek riparian, Brown and rainbow trout.
/2 Landslide geologic hazard deposits on the north slope of Douglas Mtn. and south of Clear Creek.
/3 Lots 3,4,5,8,9, and 10 S33 closed by classification for recration and public purposes.
/4 Secondry watershed to Clear Creek pollution problem.
/5 Mining claim policy, water power withdrawal.
/6 Values: wildlife, forestry, water quality, open space, scenic, minerals.
/7 USFS.

815. Georgetown NW		1A Retention/9	1A Retention/8	1B Disposal/10	1B Disposal/10	1A Retention/8
T3S R74W		2A Existing/3		C Specif. Review	C Specif. Review	
S32	90	C None				
T4S R74W		3A Important/2	3A Important/2		3A Important/2	3A Important/2
S4	80	4B Unavailable				
S5	400	C Noncommercial				
		D Nonforest				
S8	170	5B Open				
S17	70	6A Concern Area/1	6A Concern Area/1		6A Concern Area/1	6A Concern Area/1
	810	7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General	12A Important/7		12A Important/7	12A Important/7
		13B Class II				
		14D Rural/4				
		E Urban				
		15D High				
		16D Class III				
		17A Concern Area/5				
		18B Concern Area/6				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Two floodplain sections along Clear Creek, pollution problem.
/2 Red tail hawk nesting area, Clear Creek riparian, Brown and rainbow trout, and bighorn sheep.
/3 County road, scattered tracts lacking roads, walking access from US Forest Service.
/4 North half rural, south urban.
/5 Landslide geologic hazard deposits between Clear Creek and Saxon Mtn.
/6 Lot 14 S32, W1/2NW S4, and portions of E1/2 S5 closed by classification for recreation and public purposes.
/7 North half important open space.
/8 USFS.
/9 Values: wildlife, water quality, open space.
10/ General - small tracts without mining claims. Mining claim policy.

816. Georgetown		1A Retention/7	1A Retention/8	1B Disposal/10	1B Disposal/10	1A Retention/8
T4S R74W		2A Existing/3		C Specif. Review/9	C Specif. Review/9	
S4	40	C None				
S5	30	3A Important/2	3A Important/2		3A Important/2	3A Important/2
S8	100	4B Unavailable				
S17	190	D Nonforest				
	360	5B Open				
		6A Concern Area/1				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14E Urban	14D Rural		14D Rural	14D Rural
		15A NRHP/4	15A NRHP/4		15A NRHP/4	15A NRHP/4
		16D Class III				
		17A Concern Area/6				
		18B Concern Area/5				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 One floodplain section along South Fork Clear Creek, pollution problem.
/2 Bighorn sheep, mule deer, South Fork Clear Creek riparian, and Brook trout.
/3 County road, private roads, scattered tracts lacking roads.
/4 Georgetown NRHP and National Historic Landmark.
/5 Closed by classification for recreation and public purposes.
/6 Landslide geologic hazard deposits between Clear Creek and Saxon Mtn.
/7 Values: wildlife, open space, scenic, water power, cultural, minerals, recreation.
/8 USFS.
/9 Mining claim policy water power withdrawal.
/10 General - small tracts with no mining claims.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
817. Graymont		1A Retention/5	1A Retention/6	1B Disposal/7	1B Disposal/7	1A Retention/6
T4S R75W		2A Existing/3		C Specif. Review/8	C Specif. Review/8	
S14	100	C None				
S15	300	3A Important/2	3A Important/2		3A Important/2	3A Important/2
S16	300	4B Unavailable				
S21	300	B Unavailable				
S22	100	C Noncommercial				
S23	280	D Nonforest				
S24	120	5B Open				
	1500	6A Concern Area/1	6A Concern Area/1		6A Concern Area/1	6A Concern Area/1
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14D Rural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17A Concern Area/4	17A Concern Area/4		17A Concern Area/4	17A Concern Area
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 One 3/4 mile floodplain section along Clear Creek and pollution problem.
/2 Clear Creek riparian and bighorn sheep.
/3 County road, a few scattered tracts lacking roads.
/4 Avalanche zone geologic hazard.
/5 Values: wildlife, water quality, open space, scenic, recreation, minerals.
/6 USFS.
/7 General - small tracts without mining claims.
/8 Mining claim policy.

818. Silver Plume		1A Retention/8	1A Retention/7	1B Disposal/9	1B Disposal/9	1A Retention/7
T4S R75W		2A Existing/2		C Specif. Review	C Specif. Review	
S13	20	C None				
S24	160	3A Important/1	3A Important/1		3A Important/1	3A Important/1
	180	4B Unavailable				
		D Nonforest				
		5B Open				
		6A Concern Area/6	6A Concern Area/6		6A Concern Area/6	6A Concern Area/6
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14E Urban	14D Rural		14D Rural	14D Rural
		15A NRHP/4	15A NRHP/4		15A NRHP	15A NRHP
		16D Class III				
		17A Concern Area/3	17A Concern Area/3		17A Concern Area/3	17A Concern Area/3
		18B Concern Area/5				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Bighorn sheep.
/2 County road, private roads, walking access from US Forest Service.
/3 Avalanche zone geologic hazard and landslide geologic hazard deposit south of Clear Creek.
/4 Georgetown Railroad NRHP and National Historic Landmark.
/5 Portion of S24 closed by recreation and public purposes lease application.
/6 Secondary watershed to Clear Creek pollution problem.
/7 USFS.
/8 Values: wildlife, water quality, open space, scenic, recreation, cultural.
/9 General - water power withdrawal problem; small tracts with no mining claims, mining claim policy.

819. Georgetown		1A Retention/8	1A Retention/9	1B Disposal/10	1B Disposal/10	1A Retention/9
Rail Road		2A Existing/3				
T4S R74W		C None				
S17	40	3A Important/2	3A Important/2		3A Important/2	3A Important/2
S18	100	4B Unavailable				
S19	160	D Nonforest				
	300	5B Open				
		6A Concern Area/1	6A Concern Area/1		6A Concern Area/1	6A Concern Area/1
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14D Rural/4				
		15A NRHP/5	15A NRHP/5		15A NRHP/5	15A NRHP/5
		16D Class III				
		17A Concern Area/7	17A Concern Area/7		17A Concern Area/7	17A Concern Area/7
		18B Concern Area/6				
		C Closed				
		19C Closed/5				
		20D None				
		21D Open				
		22-29A General				

/1 Three floodplain sections along Clear Creek, and pollution problems.
/2 Clear Creek riparian and bighorn sheep.
/3 County roads, private roads, railroad.
/4 Historic rail road operating for tourists.
/5 Georgetown Railroad NRHP and National Historic Landmark.
/6 Closed by recreation and public purposes lease and lease application.
/7 Landslide geologic hazard deposit south of Clear Creek.
/8 Values: wildlife, water quality, open space, recreation, cultural.
/9 USFS.
/10 State/local - water power withdrawal problem.

Mgt. Unit	Acres	Issue Management Categories by Alternative A	B	C	D	E
820. Leavenworth Mtn.		1A Retention/6	1A Retention/7	1B Disposal/8	1B Disposal/8	1A Retention/7
T4S R74W		2A Existing/2		C Specif. Review/9	C Specif. Review/9	
S17	80	C None				
S18	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
S19	90	4B Unavailable				
S20	60	5B Open				
	270	6A Concern Area/5	6A Concern Area/5		6A Concern Area/5	6A Concern Area/5
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13B Class II
		14D Rural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17A Concern Area/3	17A Concern Area/3		17A Concern Area/3	17A Concern Area/3
		18B Concern Area/4				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Bighorn sheep and mule deer.
/2 County roads, scattered tracts lack roads.
/3 Landslide geologic hazard deposit west of Leavenworth Mtn.
/4 Closed by recreation and public purposes leases and lease application.
/5 Secondary watershed to Cler Creek pollution problem.
/6 Values: wildlife, water quality, open space, scenic, recreation, forestry.
/7 USFS.
/8 General - small tracts with no mining claims, water power withdrawal problem.
/9 Mining claim policy.

Mgt. Unit	Acres	A	B	C	D	E
821. Independence Mtn.		1A Retention/4	1A Retention/5	1B Disposal/6	1A Retention/5	1A Retention/5
T4S R74W		2A Existing/2		C Specif. Review		
S17	50	C None				
S20	400	3A Important/I	3A Important/1			
	450	4A Available	4A Available		4A Available	4A Available
		B Unavailable	B Unavailable		B Unavailable	B Unavailable
		5B Open				
		6A Concern Area/3	6A Concern Area/3		6A Concern Area/3	6A Concern Area/3
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II				
		14D Rural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Bighorn, elk, mule deer, and South Fork Clear Creek riparian and Brook trout.
/2 County roads, private roads, walk from US Forest Service.
/3 Secondary watershed to Clear Creek pollution problem, reservoir, floodplain.
/4 Values: wildlife, forestry, water quality, open space, recreation, minerals.
/5 USFS.
/6 General - small tracts with no mining claims. Mining claim policy.

Mgt. Unit	Acres	A	B	C	D	E
901. Snyder Mtn.		1A Retention/3		1B Disposal/4	1B Disposal/4	1B Disposal/4
T4S R72W		2C None				
S27	40	3A Important/1	3A Important		3A Important	3A Important
		4B Unavailable				
		5B Open	5C Closed		5C Closed	5C Closed
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13D Class IV				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18C Closed/2				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Elk calving and mule deer, raptors.
/2 Classified for recreation and public purpose.
/3 Values: wildlife, scenic, recreation, open space.
/4 General - water power withdrawal problem.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
902. Mt. Evans		1A Retention/6	1A Rentention/3	1B Disposal/5	1B Disposal/5	1B Disposal/5
T5S R73W		2A Existing/2				
S13	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4A Available	4A Available		4A Available	4A Available
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13B Class II	13B Class II			
		14D Rural	14D Rural		14D Rural	14D Rural
		15D High				
		16D Class III				
		17B None				
		18C Closed/4				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Elk and mule deer.
/2 County road.
/3 US Forest Service.
/4 Withdrawn for US Forest Service Administrative Site 6/29/1908.
/5 Colorado Division of Wildlife - Mt. Evans Management Area.
/6 Values: wildlife, scenic, recreation.

Mgt. Unit	Acres	A	B	C	D	E
903. Deer Creek		1A Retention/4	1A Retention/3	1B Disposal/5	1A Retention/3	1A Retention/3
T6S R73W		2A Existing/2				
S27	40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4A Available	4A Available		4A Available	4A Available
		D Nonforest	D Nonforest		D Nonforest	D Nonforest
		5A Leased				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed			
		10A Cooperative				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13D Class IV				
		14C Roaded Natural				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Riparian along Deer Creek, Brook and rainbow trout, mule deer.
/2 County road.
/3 US Forest Service.
/4 Values: wildlife, forestry, livestock, open space, recreation.
/5 General - withdrawal problem.

Mgt. Unit	Acres	A	B	C	D	E
904. Crooked Top Mtn.		1A Retention/5	1A Retention/3	1B Disposal/4	1A Retention/3	1A Retention/3
T6S R73W		2A Existing/2				
S35	160	C None				
		3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4B Unavailable				
		5A Leased	5A Leased		5A Leased	5A Leased
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13D Class IV				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mule deer.
/2 Walking access from US Forest Service.
/3 US Forest Service.
/4 General.
/5 Values: wildlife, recreation, livestock.

Mgt. Unit	Acres	A	B	C	D	E
905. Yankee Creek		1A Retention/5	1A Retention/3	1B Disposal/4	1B Disposal/4	1B Disposal/4
T6S R72W		2A Existing/2				
S3	50	C None				
		3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed		9B Closed	9B Closed
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Elk and mule deer.
/2 Walking access from US Forest Service.
/3 US Forest Service.
/4 General.
/5 Values: wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
906. Deermont		1A Retention/3		1B Disposal/2	1B Disposal/2	1B Disposal/2
T6S R70W		2C None				
S23	4.00	3A Important/1	3A Importan/1		3A Important/1	3A Important/1
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14C Roaded Natural		14C Roaded Natural	14C Roaded Natural
		15D High				
		16D Class III				
		17B None				
		18A Available				
		19A Open				
		20D None				
		21D Open				
		22-29A General				

/1 Elk and mule deer.
/2 General.
/3 Values: wildlife, recreation.

Mgt. Unit	Acres	A	B	C	D	E
907. Grouse Mtn.		1A Retention/6	1A Retention/2	1B Disposal/5	1A Retention/2	1A Retention/2
T7S R72W		2A Existing/3				
S18	7.20	C None				
S19	57.40	3A Important/1	3A Important/1		3A Important/1	3A Important/1
	64.60	4B Unavailable				
		5B Open				
		6B General	6B General		6B General	6B General
		7B None				
		8B Stable/Slight				
		9A Open				
		10A Cooperative				
		11A Open				
		12B General				
		13C Class III				
		14C Roaded Natural	14B SPM		14B SPM	14B SPM
		15D High				
		16D Class III				
		17B None				
		18B Concern Area/4				
		C Closed				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mule deer.
/2 US Forest Service.
/3 Walking access from US Forest Service.
/4 Lots 3 and 4 S19 closed by Federal Power Commission order C-0123480 for withdrawal for power project 552.
/5 General - Power project problem (see/4).
/6 Values: wildlife, water quality, water power, recreation.

Mgt. Unit	Acres	A	B	C	D	E
908. West Resort Ck.		1A Retention/3		1B Disposal/2	1B Disposal/2	1B Disposal/2
T7S R73W		2C None				
S2	80	3A Important/1	3A Important/1			
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open	9B Closed			
		10B General				
		11A Open				
		12B General	12A Important			
		13C Class III				
		14C Roaded Natural	14B SPM			
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Elk and mule deer.
/2 General.
/3 Values: wildlife,open space, recreation.

Mgt. Unit	Acres	A	B	C	D	E
909. Cathedral Spires		1A Retention/3	1A Retention/4	1B Disposal/5	1B Disposal/5	1B Disposal/5
T7S R70W		2C None				
S10	80	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9B Closed				
		10B General				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II				
		14B SPM				
		15D High				
		16D Class III				
		17A Concern Area/2	17A Concern Area/2		17A Concern Area/2	17A Concern Area/2
		18B Concern Area				
		19C Closed				
		20D None				
		21D Open				
		22-29A General				

/1 Peregrine falcon, prairie falcon, and mule deer.
/2 Cathedral spries geologic feature.
/3 Values; wildlife, scenic, open space, recreation, water quality.
/4 USFS.
/5 State or county.

Mgt. Unit	Acres	Issue Management Categories by Alternative				
		A	B	C	D	E
910. Foxton		1A Retention/2	1A Retention/3	1B Disposal/4	1B Disposal/4	1R Disposal/4
T7S R70W		2C None				
S20	240	3A Important/1	3A Important/1		3A Important/1	3A Important/1
		4B Unavailable				
		5B Open				
		6B General				
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12B General	12A Important		12A Important	12A Important
		13B Class II	13B Class II		13B Class II	13R Class II
		14A SPNM				
		15D High				
		16D Class III				
		17B None				
		18B Concern Area				
		19B Concern Area				
		20D None				
		21D Open				
		22-29A General				

/1 Mule deer.
/2 Values: wildlife, open space, water quality, water power.
/3 USFS.
/4 State or County.

Mgt. Unit	Acres	A	B	C	D	E
911. South Platte Canyon	2860	1A Retention/1				

/1 US Forest Service - Cooperative Agreement in effect designating the FS as managing agency.

Mgt. Unit	Acres	A	B	C	D	E
1001. Prospect Res.		1A Retention/5	1B Disposal/3	1B Disposal/4	1B Disposal/3	1B Disposal/3
T1N R64W		2A Existing/2				
S26	64.41	3A Important/1				
		4D Nonforest				
		5C Closed				
		6B General				
		7B None				
		8C Moderate				
		9B Closed				
		10B General				
		11A Open				
		12B General				
		13D Class IV				
		14D Rural				
		15E Low				
		16C Class II				
		17B None				
		18B Concern Area				
		19C Closed				
		20B Open				
		21C Yearlong				
		22-29A General				

/1 Waterfowl, federal endangered bald eagle.
/2 County road to dam - submerged land.
/3 Private.
/4 General.
/5 Values: wildlife, recreation, water resrvoir.

Mgt. Unit	Acres	A	B	C	D	E
1002. Horse Cr. Res.		1A Retention/3		1B Disposal/2	1B Disposal/2	1R Disposal/2
T1N R64W		2C None				
S32	160	3A Important/1				
		4D Nonforest				
		5C Closed				
		6B General				
		7B None				
		8C Moderate				
		9B Closed				
		10B General				
		11A Open				
		12B General				
		13C Class III				
		14D Rural				
		15E Low				
		16D Class III				
		17B None				
		18B Concern Area				
		19C Closed				
		20B Open				
		21C Yearlong				
		22-29A General				

/1 Waterfowl.
/2 Private.
/3 Values: wildlife, water resrvoir.

Mgt. Unit	Acres	A	B	C	D	E
1003. Manitou Springs		1A Retention/4	1A Retention/2	1B Disposal/3	1A Retention/2	1A Retention/2
T14S R67W		2A Existing/1				
S7	115.90	C None				
S17	40.00	3B General				
	155.90	4B Unavailable				
		5B Open				
		6A Concern Area/3	6A Concern Area/3		6A Concern Area/3	6A Concern Area/3
		7B None				
		8B Stable/Slight				
		9A Open				
		10B General				
		11A Open				
		12R General	12A Important		12A Important	12A Important
		13B Class II				
		14B SPM				
		15B State/Local	15B State/Local		15B State/Local	15B State/Local
		16D Class III				
		17B None				
		18A Available	18B Concern Area		18B Concern Area	18B Concern Area
		19A Open	19C Closed		19C Closed	19C Closed
		20D None				
		21A Standard	21D Open		21D Open	21D Open
		22-29A General				

/1 County road to S7.
/2 USFS.
/3 Manitou Springs (watershed).
/4 Values: water quality, open space, scenic.

APPENDIX C

MANAGEMENT OF SUBSURFACE ESTATE

INTRODUCTION

These tables describe the minerals management of subsurface estate where, and only where, the surface is owned by non-federal entities (State, local, corporate, private, etc.). Township, Range, Section, and parcel descriptions are used to organize the tables.

Surface owner consultation and coordination is assumed to be a major prerequisite to these management proposals such that they must be considered tentative awaiting review.

Four issues are addressed for subsurface estate:

18. Locatable (hardrock) minerals.

19. Saleable (sand, gravel, rock) minerals.

20. Coal - column "C" unsuitablility determinations are noted as:
    + Building property conditionally unsuitable.
    0 Floodplain/alluvial valley floor conditionally unsuitable.
    * Wildlife habitat conditionally unsuitable.

21. Oil and Gas - column "B" seasons of surface occupancy are noted as:

Number	Surface Occupancy Permitted Time Period	Rationale
1	4/1 - 12/15	Mule Deer
2	7/1 - 12/15	Bighorn Sheep & Mule Deer
3	7/1 - 12/15	Bighorn Sheep & Elk
4	8/1 - 3/31	Wild Turkey
5	4/15 - 11/15	Bald Eagle
6	10/1 - 3/15	White Pelican
7	7/1 - 3/31	Waterfowl
8	6/15 - 2/28	Greater Prairie Chicken
9	7/1 - 2/15	Raptors
10	10/15 - 5/15	Recreation Protection
11	7/1 - 4/30	Elk Calving

Refer to Chapter II prescription definitions for explanations of management i.e. 18A, 18B, 19C, 20A, 21A, 21E, etc. Where no "X", symbol, nor number is found the mineral estate is non-federal.

MANAGEMENT ZONE 1

276,625.35 acres

18. Locatable Minerals

	Potential: High	Moderate	Low
Available	0	0	1,670.69
Concern Area	0	0	0
Closed	0	0	4,967.14

19. Salable Minerals

	Potential: High	Moderate	Low
Open	80	882.23	788.46
Concern Area	0	0	0
Closed	319.16	3687.98	880

20. Coal

	Potential: High	Moderate	Low	None
Suitable	92,353.92	0	0	0
Open	0	87,232.20	55,525.05	0
Unsuitable	9,754.46	0	0	0
None	0	0	0	32,141.63

21. Oil and Gas

	Potential: High	Moderate	Low
Standard	682.30	6,497.55	0
Seasonal	0	0	0
Yearlong	0	40	0
Open	0	0	0
Unsuitable	0	0	0

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T4S R58W																
Sec.18	634.04								X							
Sec.20	640								X							
Sec.28	640								X							
Sec.30	638.24								X							
Sec.32	640								X							
T5S R58W																
Sec.4	482.64								X							
Sec.6	637.66								X							
Sec.8	640								X							
Sec.18	478.80								X							
Sec.20	640								X							
Sec.28	640								X							
Sec.30	640.36								X							
T6S R58W																
Sec.4;SW¼SW¼, SE¼NW¼,SE¼SE¼	120	X			X				X			X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.4;N½N½,N½S½, SW¼NW¼,S½NE¼, SE¼SW¼,SW¼SE¼	634.90								X							
Sec.6;Lot 4	67.67								X			X				
Sec.6;Lot 2	68.05	X			X				X			X				
Sec.6;NE¼NW¼, NE¼NE¼,S½N½,S½	615.93								X							
Sec.8	480								X							
Sec.18	640.60								X							
Sec.20	480								X							
Sec.22	640								X							
Sec.22	640								X							
Sec.26;E½E½, W½NE¼,SW¼SE¼	280	X			X				X			X				
Sec.26;NW¼,W½SW¼, NW¼SE¼	320								X							
Sec.28	640								X							
Sec.30	641.72								X							
Sec.32	640								X							
Sec.34	320								X							
T7S R58W																
Sec.2;W½NW¼,N½NE¼, SE¼NE¼,SE¼SW¼, SE¼SE¼	280.41	X			X				X			X				
Sec.2;E½NW¼,N½S½	320.08								X							
Sec.4;W½NW¼, NE¼NW¼	160.35								X							
Sec.4;Remainder	480.57							X								
Sec.6	488.88								X							
Sec.8	480								X							
Sec.10;SE¼SE¼	40								X							
Sec.10;SW¼SE¼	40									+						
Sec.10;SW¼,N½SE¼	240							X								
Sec.12	640								X							
Sec.14	320								X							
Sec.18	650.80							X								
Sec.20	640							X								
Sec.28;W½	320							X								
Sec.28;Remainder	320								X							
Sec.30;E½	320							X								
Sec.30;E½W½	160								X							
Sec.32	480							X								
Sec.34	480								X							
T8S R58W																
Sec.2	481.35								X							
Sec.4	642							X								
Sec.6;S½, S½NW¼, NW¼NW¼	444.25							X								
Sec.6;NE¼NW¼	40.14									+						
Sec.8	640							X								
Sec.18;S½SW¼, NE¼SW¼	120.80									0 +						
Sec. 18;SE¼, SE¼NE¼	200							X								
Sec.20	640							X								
Sec.30;NW¼	161.94									0 +						
Sec.30;Remainder	482.06							X								
Sec.32	640							X								
Sec.34	480							X								
T9S R58W																
Sec.6;SE¼SE¼	40									+						
Sec.6;NE¼SE¼	40									0						
Sec.6;Remainder	558.15							X								
Sec.8;NW¼NW¼	40									0						
Sec.8;E½,E½W½, SW¼NW¼,SW¼SW¼	560							X								
Sec.10	320								X							
Sec.18	644.32							X								
Sec.20	640							X								
Sec.24	40	X			X				X			X				
Sec.28	440								X							
Sec.30	647.88								X							
Sec.32	320								X							
Sec.34	160								X							
T10S R58W																
Sec.2	472.20								X							
Sec.4	156.54								X							
Sec.6	472.50							X								
Sec.8;N½NW¼, SE¼NW¼	120							X								
Sec.8;NW¼NE¼	40								X							
Sec.10	320								X							
Sec.12	480								X							
Sec.14	320								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.18;E½SE¼	80								X							
Sec.18;SW¼SE¼	40							X								
Sec.20;N½SE¼	480			X			X	X				X				
Sec.20;Remainder	160									0						
Sec.24	480								X							
Sec.26	160								X							
Sec.28;W½	320			X			X	X				X				
Sec.28;Remainder	320							X								
Sec.30	643.68							X								
Sec.32;NE¼NW¼	40									+						
Sec.32;NE¼, W½NW¼, SE¼NW¼	280							X								
Sec.34;N½NE¼	80			X			X		X			X				
Sec.34;W½, N½SE¼, S½NW¼	480								X							
T11S R58W																
Sec.2	330.51								X							
Sec.4	412.76								X							
Sec.6	630.18								X							
Sec.8	480								X							
Sec.10	320								X							
Sec.12	480								X							
Sec.14	640								X							
Sec.18	469.48								X							
Sec.20	320								X							
Sec.28	320								X							
Sec.30	437.15								X							
Sec.32	320								X							
T12S R58W																
Sec.4	646.36								X							
Sec.6	482.16								X							
Sec.7	157.8								X							
Sec.8	360								X							
Sec.17	240			X			X		X			X				
Sec.18	155.70								X							
T4S R59W																
Sec.14	480								X							
Sec.18;E½E½	160									+						
Sec.18;Remainder	469.60							X								
Sec.20;S½SW¼	80									+						
Sec.20; Remainder	560							X								
Sec.22;NE¼SE¼	40									+						
Sec.22;Remainder	600							X								
Sec.24	160								X							
Sec.26	320								X							
Sec.28;W½SW¼	80									0						
Sec.28;E½SW¼	80							X								
Sec.30;E½E½	160									+						
Sec.30;W½E½	160							X								
Sec.32	640							X								
Sec.34;SW¼SW¼	40									+						
Sec.34;SE¼, E½SW¼, NW¼SW¼	280							X								
T5S R59W																
Sec.2;Lot4	39.41									+						
Sec.2;W½E½, E½W½	318.90									0						
Sec.2;Remainder	279.49							X								
Sec.4;W½SW¼	80								X							
Sec.4;Remainder	558.72							X								
Sec.6	627.15								X							
Sec.8	640								X							
Sec.10;S½, S½NW¼	400								X							
Sec.10;NW¼, N½NW¼	240							X								
Sec.12;N½NW¼	80							X								
Sec.12;S½, NE¼, S½NW¼	560								X							
Sec.14	640								X							
Sec,20	640								X							
Sec.22	640								X							
Sec.24	640								X							
Sec.26	640								X							
Sec.28;N½	320								X							
Sec28;SE¼	160									0						
Sec.28;SW¼	160							X								
Sec.30	120								X							
Sec.32;SW¼, N½NW¼, NW¼NE¼	280								X							
Sec.32;SE¼, NE¼NE¼	200							X								

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.34;E½NE¼, NE¼SE¼	120								X							
Sec.34;S½NW¼, W½SE¼	160									0						
Sec.34;N½NW¼, SW¼, W½NE¼, SE¼SE¼	360							X								
T6S R59W																
Sec.2	536.2								X							
Sec.4;SE¼	160								X							
Sec.4;SE¼NW¼	40									+						
Sec.4;E½, NE¼NW¼, W½NW¼	555.04							X								
Sec.6	757.95								X							
Sec.8	480								X							
Sec.10	640								X							
Sec.12	640								X							
Sec.14	640								X							
Sec.20	640								X							
Sec.22	280								X							
Sec.24	480								X							
Sec.26	480								X							
Sec.28;NW¼NW¼	40								X							
Sec.28;SW¼SW¼	40									0						
Sec.28;SE¼, E½W½, NW¼SW¼, SW¼NW¼	400							X								
Sec.30	477.36								X							
Sec.32	640								X							
Sec.34;NE¼NW¼	40									+						
Sec.34;N½SW¼, S½NW¼, NW¼NW¼	200							X								
Sec.34;S½SW¼	80								X							
T7S R59W																
Sec.2	160.65								X							
Sec.10	40							X								
Sec.12	80								X							
Sec.18	632.8								X							
Sec.20	640								X							
Sec.24	480								X							
Sec.26	480								X							
Sec.28	640								X							
Sec.30	469.80								X							
Sec.34;NW¼NE¼	40									*						
Sec.34;SE¼SE¼	40							X								
T8S R59W																
Sec.12;E½NE¼	80									0						
Sec.12;Remainder	560							X								
Sec.22	200								X							
Sec.24	40									+						
Sec.24;Remainder	600							X								
Sec.28;SE¼NW¼	40									0 *						
Sec.28;W½SW¼, SW¼NW¼	120							X								
T9S R59W																
Sec.2	637.68								X							
Sec.4	161.36								X							
Sec.6	160								X							
Sec.8	280								X							
Sec.10;W½NW¼, E½NE¼	160								X							
Sec.10;E½SE¼, W½SW¼, NE¼SW¼	200							X								
Sec.12;W½W½. N½SE¼	240									+						
Sec.12;E½SE¼	80									0						
Sec.12;Remainder	320							X								
Sec.14	320							X								
Sec.22;E½SE¼	80								X							
Sec.22;E½NE¼	80							X								
Sec.24	320							X								
Sec.26	640								X							
Sec.30	160								X							
Sec.32;SE¼NW¼	40							X								
Sec.32;W½NE¼, NE¼NE¼	120								X							
Sec.34	160								X							
T10S R59W																
Sec.2;NE¼SW¼, NW¼SW¼	80								X							
Sec.2;W½SW¼	80							X								
Sec.8;SW¼SW¼, SE¼SE¼	80									0						
Sec.8;SE¼SE¼, SW¼SE¼	80							X								
Sec.10	40	X			X			X				X				
Sec.12	640							X								
Sec.18	40	X			X				X			X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.24	280							X								
Sec.28	640							X								
Sec.30	160								X							
Sec.34	160								X							
T11S R59W																
Sec.2	600.43								X							
Sec.4	636.95								X							
Sec.6	479.68								X							
Sec.12	80								X							
Sec.14;E½,NW¼, E½SW¼	.0								X							
Sec.14;Remainder	80							X								
Sec.18	163.46								X							
Sec.24	320								X							
Sec.26;NW¼. S½NW¼,NE¼NW¼	280								X							
Sec.26;NW¼NW¼	40							X								
Sec.28;E½NE¼	80							X								
Sec.28;SE¼,E½SW¼, NW¼SW¼,SW¼NE¼	360								X							
NW¼NW¼ Sec.33	200							X								
Sec.34	320								X							
T12S R59W																
Sec.2	406.64								X							
Sec.3.S½NE¼, NE¼NE¼,SE¼SW¼	161.59								X							
Sec.3;SW¼SW¼	40									+						
Sec.3;NW¼, SE¼SW¼,NW¼NE¼	240							X								
Sec.4	320							X								
Sec.5;SW¼	160								X							
Sec.5;SE¼	160							X								
Sec.6	163.73								X							
Sec.7	414.40								X							
Sec.8	320								X							
Sec.9;SW¼,W½SE¼, NE¼SE¼,S½N½, NW¼NW¼	480								X							
Sec.9;N½NE¼	80									+						
Sec.9;Remainder	80							X								
Sec.11	360								X							
Sec.12	440								X							
Sec.14;SE¼,E½NE¼, NE¼NW¼	280								X							
Sec.14;SW¼.S½NW¼, NW¼NW¼	280							X								
Sec.15	320							X								
Sec.18	492.80								X							
Sec.19	200								X							
Sec.19;Remainder	452.80							X								
Sec.20;NW¼NW¼	40								X							
Sec.20;NE¼NW¼, SW¼NE¼,NE¼SE¼	120									0						
Sec.20;S½NW¼, N½NE¼,SE¼NE¼, W½SE¼,SE¼SE¼	320							X								
Sec.21;N½SW¼	80									0						
Sec.21;S½S½	160							X								
Sec.22;SE¼SE¼	40									0						
Sec.22;S½SW¼, SW¼SE¼	120							X								
Sec.23;E½	320								X							
Sec.23;N½NW¼	80							X								
Sec.25	160								X							
Sec.26	240								X							
Sec.27	480								X							
Sec.28;N½NW¼	80									+						
Sec.28;SW¼, S½NW¼	240							X								
Sec.29;SW¼SW¼	40								X							
Sec.29;N½NE¼	80									+						
Sec.29;Remainder	520							X								
Sec.30	653.20								X							
Sec.31	326.49								X							
Sec.32	600								X							
Sec.33	480								X							
Sec.34	400								X							
Sec.35	640								X							
T13S R59W																
Sec.1	320.80								X							
Sec.2	320.25								X							
Sec.3	160								X							
Sec.4	557.72								X							
Sec.5	80								X							
Sec.6	328.29								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.7	488.26								X							
Sec.8	480								X							
Sec.9	280								X							
Sec.18	325.98								X							
Sec.31	320			X			X		X			X				
Sec.32	160								X							
Sec.33	160								X							
T7S R60W																
Sec.30	40	X			X				X			X				
Sec.32	80	X			X				X			X				
T8S R60W																
Sec.6	39.72	X			X				X			X				
T10S R60W																
Sec.8	160								X							
Sec.10	160								X							
Sec.12	200							X								
Sec.18	159.08								X							
Sec.30	476.96								X							
T11S R60W																
Sec.4	484.89							X								
Sec.5	163.26							X								
Sec.6	80								X							
Sec.7	80			X	X				X			X				
Sec.8	320							X								
Sec.9;NE¼NW¼	40							X				X				
Sec.9;SW¼NW¼	40							X								
Sec.10;W½NE¼, NW¼SE¼	120								X							
Sec.10;NW¼,NE¼SW¼	200							X								
Sec.14	360								X							
Sec.19	239.07							X								
Sec.23	320								X							
Sec.24	160								X							
Sec.29	160								X							
Sec.30	243.87							X								
Sec.31;SE¼SE¼	40									+						
Sec.31;SW¼SE¼	40							X								
Sec.32;NW¼SW¼	40									+						
Sec.32;S½SW¼, NE¼SW¼	120								X							
Sec.34	160								X							
T12S R60W																
Sec.9	240								X							
Sec.11	160			X			X		X			X				
Sec.12	160								X							
Sec.14;NE¼	160			X			X		X			X				
Sec.14;NW¼,SE¼	320								X							
Sec.15	320								X							
Sec.17	160								X							
Sec.19	168.93								X							
Sec.23	480								X							
Sec.24	640								X							
Sec.25	640								X							
Sec.26	320								X							
Sec.27	480								X							
Sec.28	160								X							
Sec.29	440								X							
Sec.30	320								X							
Sec.31;E½NE¼	80								X							
Sec.31;N½NW¼	85.38									0						
Sec.31;W½SW¼. E½SE¼	171.59							X								
Sec.32	520								X							
Sec.33	560								X							
Sec.34	480								X							
Sec.35	320								X							
T13S R60W																
Sec.1	562.4								X							
Sec.2	483.39								X							
Sec.3	647.2								X							
Sec.4	646.39								X							
Sec.5;Lots1,2,3, S½NE¼,SE¼,SE¼NW¼ E½SW¼,SW¼SW¼	524.78								X							
Sec.5;Lot4,SW¼NW¼, NW¼SW¼	121.7							X								
Sec.6;Lot1,	41.5									+						

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	18 B	18 C	19 SALABLE A	19 B	19 C	20 COAL A	20 B	20 C	20 D	21 OIL AND GAS A	21 B	21 C	21 D	21 E
Sec.6;Lot 5,6,7, E½SW¼, SE¼, SE¼NE¼	463.6							X								
Sec.7;Lot3,4, E½SW¼, SE¼, S½NE¼ NE¼NE¼	451.36								X							
Sec.7;NW¼NE¼	40							X								
Sec.8	640								X							
Sec.9	640								X							
Sec.12	640								X							
Sec.13	320								X							
Sec.15	400								X							
Sec.17	400								X							
Sec.18	456.66								X							
Sec.19	468.21								X							
Sec.20	320								X							
Sec.21	160								X							
Sec.22	480								X							
Sec.23	320								X							
Sec.24	160								X							
Sec.25	320			X			X		X			X				
Sec.26	320								X							
Sec.28;NW¼NE¼	40									0						
Sec.28;NE¼NW¼, W½NE¼	120							X								
Sec.29	400								X							
Sec.30	499.92								X							
Sec.31	409.16								X							
Sec.32	240								X							
Sec.33;NE¼NE¼	40									0						
Sec.33;NW¼NE¼, SE¼NE¼	80							X								
Sec.33;NW¼, N½SW¼, NW¼SE¼, SW¼NE¼	320			X			X	X				X				
T14S R60W																
Sec.5	280.68								X							
Sec.6	369.62								X							
Sec.7	330.8								X							
Sec.18	160								X							
Sec.19	320								X							
Sec.21	320			X			X		X			X				
Sec.30	318.35							X								
T5S R61W																
Sec.28	160			X			X		X			X				
T6S R61W																
Sec.6	42.30	X			X				X			X				
Sec.20;W½	320								X							
Sec.20;SE¼	160							X								
Sec.28	80	X			X				X			X				
Sec.30	380.20								X							
Sec.32	640								X							
T7S R61W																
Sec.6	40.15								X			X				
Sec.6;Remainder	649.94								X							
Sec.8	480								X							
Sec.18	512.44								X							
Sec.20;N½NW¼	80	X			X				X			X				
Sec.20;SW¼, S½NW¼, S½SE¼	320								X							
Sec.30;NE¼NE¼	40								X							
Sec.30;NW¼SE¼, SE¼NE¼, W½NE¼, W½W½, E½NW¼, NE¼SW¼	481.28							X								
Sec.32;NW¼, N½SW¼	240							X								
Sec.32;E½SE¼	80								X							
T8S R61W																
Sec.6	80							X								
Sec.8;SE¼SW¼	40									+						
Sec.8; Remainder	600							X								
Sec.18	160							X								
Sec.20;S½S½, N½N½	320								X							
Sec.30	509.6							X								
T9S R61W																
Sec.6	632.22							X								
Sec.7;N½N½	167.98			X			X	X				X				
Sec.7;S½, S½N½	502.98							X								
Sec.8;NW¼	160			X			X	X				X				
Sec.8;SW¼	160							X								
Sec.17	480							X								
Sec.18	667.76							X								
Sec.19	345.12							X								

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	18 B	18 C	19 SALABLE A	19 B	19 C	20 COAL A	20 B	20 C	20 D	21 OIL AND GAS A	21 B	21 C	21 D	21 E
Sec.11;S½S½, N½SW¼, NE¼SE¼	280							X								
Sec.17	120							X								
Sec.24	160			X			X		X			X				
Sec.25;N½	320			X			X	X				X				
Sec.25;SE¼	160							X								
Sec.26	480			X			X	X				X				
T11S R61W																
Sec.2;N½SW¼	80									0						
Sec.2;S½SW¼	80							X								
Sec.3;N½SE¼, SW¼NW¼	120									0						
Sec.3;S½SE¼, E½NW¼	160							X								
Sec.3;NW¼NW¼	40							X				X				
Sec.4;SE¼NE¼, NW¼NE¼, S½NW¼	168.08									0						
Sec.4;N½NW¼, SW¼NE¼, NE¼NE¼	184.44							X								
Sec.5	346.4							X								
Sec.6	80							X								
Sec.7;NW¼SE¼	40									+						
Sec.7;E½SW¼, S½SE¼, NE¼SE¼	200							X								
Sec.8	320							X								
Sec.9;NW¼NW¼	40									0						
Sec.9;SE¼SE¼	40									+						
Sec.9;SW¼NW¼, SW¼, W½SE¼, E½NE¼, NE¼SE¼	400							X								
Sec.10;N½NW¼	80									+						
Sec.10;SE¼SE¼, SE¼SW¼	80									0*						
Sec.10;S½N½, N½S½, N½NE¼, SW¼SE¼	440							X								
Sec.14	320							X								
Sec.15;NE¼NE¼, N½SW¼	120									*0						
Sec.15;SE¼, S½SW¼ SE¼NE¼	280							X								
Sec.17;SW¼SW¼	40									+*0						
Sec.17;N½	320							X								
Sec.18;S½NE¼ SE¼NW¼	120									*0						
Sec.18;N½NE¼, NW¼NW¼	120							X								
Sec.19	37.98							X								
Sec.20;W½NE¼, SE¼SW¼	120									0						
Sec.20;E½E½, SW¼SE¼, E½NW¼, NW¼NW¼	320							X								
Sec.21;W½E½	160									0						
Sec.21;SE¼NE¼	40									+						
Sec.21;W½SW¼, E½SE¼, NE¼NE¼	200							X								
Sec.22;NW¼NE¼, SE¼NE¼, NE¼SW¼ SW¼SE¼	120									0						
Sec.22;NE¼SE¼	40									+						
Sec.22;Remainder	480							X								
Sec.23;SE¼NW¼	40	X			X			X				X				
Sec.23;Remainder	600							X								
Sec.25;N½S½, E½NE¼	240			X			X	X				X				
Sec.25;SW¼NE¼	40									+						
Sec.25;S½S½, NW¼	320							X								
Sec.26;E½NE¼. NW¼NE¼, NE¼NW¼	160			X			X	X				X				
Sec.26;SW¼NE¼	40									+						
Sec.26; Remainder	440							X								
Sec.27	560							X								
Sec.28;SE¼NW¼	40									+						
Sec.28;SW¼NW¼, N½NW¼, SW¼, S½SE¼, E½NE¼	440							X								
Sec.29	80							X								
Sec.30;SE¼SW¼	40									0+						
Sec.30;W½SE¼, SW¼NE¼	120							X								
Sec.31;E½NW¼, NE¼SW¼	120									0						
Sec.31;NW¼NE¼	40									+						
Sec.31;NE¼, S½SW¼, NW¼SW¼, SW¼NW¼	320							X								
Sec.32	160								X							
Sec.33	320							X								
Sec.34	280							X								
Sec.35	320							X								
T12S R61W																
Sec.1	320								X							
Sec.4	160								X							
Sec.5	160								X							
Sec.6;LOT7	35.04								X			X				
Sec.6;Lot3	36.41								X							
Sec.7	155.32								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.21	160								X							
Sec.26	160							X								
Sec.31	151.1							X								
Sec.32	320							X								
Sec.33	240							X								
Sec.34	160							X								
T13S R61W																
Sec.1	160							X								
Sec.2	160								X							
Sec,3	322.29								X							
Sec,4	160								X							
Sec.5	321.17								X							
Sec.6	312.32								X							
Sec.7;Lots 1,2, &3,NE¼,E½NW¼, NE¼SW¼	388.84								X							
Sec.7;Lot4,SE¼, SE¼SW¼	236.20							X								
Sec.8;NW¼NE¼, SE¼SE¼	80									0						
Sec.8;S½NE¼, NE¼NE¼,N½SE¼, SW¼SE¼	240							X								
Sec.10	320								X							
Sec.11	160								X							
Sec.12;N½NE¼	80									+						
Sec.12;S½,NW¼, S½NE¼	560								X							
Sec.15	160								X							
Sec.17;SW¼SE¼	40									+						
Sec.17;NE¼, N½SE¼,SE¼SE¼	280							X								
Sec.18	303.68							X								
Sec.19	462.96							X								
Sec.20	480							X								
Sec.21;W½	320							X								
Sec.21;E½	320								X							
Sec.22	160								X							
Sec.23	400								X							
Sec.24	640								X							
Sec.25	640								X							
Sec.26	480								X							
Sec.27	640								X							
Sec.28	640								X							
Sec.29;S½	320								X							
Sec.29;NW¼	160							X								
Sec.30;NE¼NE¼, SW¼NE¼	80									0						
Sec.30;Lots 1,2, NW¼NE¼,SE¼NE¼, E½NW¼	231.75							X								
Sec.30;Lots3,4, E½SW¼,SE¼	311.92								X							
Sec.31	200								X							
Sec.32	600								X							
Sec.33	640								X							
Sec.34	480								X							
Sec.35	560								X							
T14S R61W																
Sec.1	523.2								X							
Sec.2	321.56								X							
Sec.3	646.4								X							
Sec.4;Lots 1thru 4,S½N½,SE¼,E½SW¼	565.85								X							
Sec.4;W½SW¼	80							X								
Sec.5;Lots1 thru 4	164.81								X							
Sec.5,S½NW¼	80									0						
Sec.5;S½,S½NE¼	400							X								
Sec.6;Lots 1,2	82.1								X							
Sec.6 SW¼SE¼	40									0						
Sec.6 SE¼SE¼	40							X								
Sec.7;Lots 1 thru 4	153.68								X							
Sec.7,E½,E½W½	480							X								
Sec.8	640							X								
Sec.9,E½,E½W½	480								X							
Sec.9,W½W½	160							X								
Sec.10,	640								X							
Sec.11	640								X							
Sec.12	640								X							
Sec.13	600								X							
Sec.14	640								X							
Sec.15	640								X							
Sec.17,N½N½, S½SW¼	240							X								

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.17,SE¼ S½N½,N½SW¼	400								X							
Sec.18	637.20							X								
Sec.19	320.10							X								
Sec.20;NW¼NW¼	80							X								
Sec.20;S½NE¼	560								X							
Sec.21;W½NE¼, E½SW¼	160									0						
Sec.21;SE¼, W½SW¼,E½NE¼	320							X								
Sec.22;E½NE¼	80								X							
Sec.22;S½NW¼, W½NE¼	560							X								
Sec.23	640								X							
Sec.24	600								X							
Sec.25;NW¼NW¼	40								X							
Sec.25;N½NE¼, E½NW¼,NE¼SW¼	200							X								
Sec.25;SW¼NW¼, NW¼SW¼	80									0						
Sec.26	480								X							
Sec.28;E½NW¼	80									0						
Sec.28;Remainder	240							X								
Sec.29;N½	320								X							
Sec.29;S½	320							X								
Sec.30	325.35							X								
Sec.31	648.95							X								
Sec.32;E½E½	160								X							
Sec.32;SW¼, W½E½	320							X								
Sec.33	480								X							
T15S R61W																
Sec.3	330.8								X							
Sec.4	641.99								X							
Sec.5;Lot 1, SE¼NE¼,S½SW¼	158.74								X							
Sec.5;Lots 2,3,4, S½NW¼,SW¼NE¼ N½SW¼	318.92							X								
Sec.6;Lot 7, SE¼SW¼,S½SE¼	162.79								X							
Sec.6;Lots 1 thru 6,S½NE¼,SE¼NW¼, NE¼SW¼,N½SE¼	488.67							X								
Sec.7	484.68								X							
Sec.8	640								X							
Sec.9	640								X							
Sec.10	640								X							
Sec.11	160								X							
Sec.14	320								X							
Sec.15	640								X							
Sec.17	640								X							
Sec.18	120								X							
Sec.19	160								X							
Sec.20	600								X							
Sec.21	320								X							
Sec.22	640								X							
Sec.23	320								X							
Sec.27	160								X							
Sec.28	320								X							
Sec.29	280								X							
T5S R62W																
Sec.18	160								X							
Sec.20	160								X							
Sec.22	480								X							
Sec.24	320								X							
Sec.26	640								X							
Sec.28	640								X							
Sec.30	475.64								X							
Sec.32	160								X							
Sec.34	480								X							
T6S R62W																
Sec.2	595.06								X							
Sec.8	480							X								
Sec.10	320								X							
Sec.14	160								X							
Sec.20;N½SE¼ E½NE¼	160									0+*						
Sec.20;NW¼, N½SW¼,W½NE¼	320							X								
Sec.22	640							X								
Sec.24	360								X							
Sec.26;N½NE¼, SE¼NE¼,SW¼SE¼	160									0						
Sec.26;W½	320							X								
Sec.28;SE¼SW¼	40									0						
Sec.28;E½,E½NW¼, NE¼SW¼	440							X								

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.32	160							X								
Sec.34	320							X								
T7S R62W																
Sec.2;SW¼NE¼	40									0						
Sec.2;Remainder	606.92							X								
Sec.4	162.26							X								
Sec.10	480							X								
Sec.12	320								X							
Sec.14	640							X								
Sec.22	480							X								
Sec.24;SW¼SW¼	40									0*						
Sec.24;SE¼,W½NW¼,NW¼SW¼	280							X								
Sec.26;S½SW¼	80								X							
Sec.26;S½SE¼	80							X								
Sec.30	39.16								X			X				
Sec.32	80							X								
Sec.33	120							X								
Sec.34	160							X								
T8S R62W																
Sec.3	160							X								
Sec.4	481.43							X								
Sec.9	640							X								
Sec.10	80							X								
Sec.12	160								X							
Sec.14;NW¼NW¼	40							X				X				
Sec.14;SE¼SW¼	40									+						
Sec.14;NW¼,SW¼NE¼,NE¼SW¼,W½SE¼	320							X								
Sec.21	160								X							
Sec.23;E½SE¼NE¼	20									0*						
Sec.23;W½SE¼NE¼,N½NE¼,SW¼NE¼	140							X								
Sec.24	160	X			X			X				X				
Sec.25;NE¼NW¼	40	X			X					0*		X				
Sec.25;E½SW¼,S½SE¼	160									0						
Sec.25; N½SE¼	80							X								
Sec.28	160								X							
T9S R62W																
Sec.1	640.82							X								
Sec.2	440							X								
Sec.11	80							X								
Sec.12	640							X								
Sec.13	640							X								
Sec.22	80							X								
Sec.23;SW¼NW¼	40									+						
Sec.23;Remainder	600							X								
Sec.24;SE¼NE¼	40	X			X			X				X				
Sec.24;NW¼,SE¼,W½NE¼,NE¼NE¼	440							X								
Sec.25	640							X								
Sec.26	480							X								
Sec.27	200							X								
Sec.29	40									*						
Sec.31	40									*						
Sec.34	160							X								
T10S R62W																
Sec.1	320.04								X							
Sec.5	40									+						
Sec.7	160								X							
Sec.10	80								X							
Sec.15	320								X							
Sec.19	160								X							
Sec.33	160								X							
Sec.34	160							X								
T11S R62W																
Sec.17	40								X							
Sec.25	280								X							
Sec.31	160								X							
T12S R62W																
Sec.3	160								X							
Sec.9	40							X								
Sec.12;N½NW¼,W½NE¼	160								X							
Sec.12;SE¼SE¼	40								X					X		

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.14	40								X							
Sec.21;SW¼SW¼	40								X			X				
Sec.21;E½E½,SE¼NW¼	200								X							
Sec.22	400								X							
Sec.23	160								X							
Sec.24	40								X							
Sec.26	160								X							
Sec.27	320								X							
Sec.28	80								X							
Sec.31	40								X							
Sec.33	80								X							
Sec.34	160								X							
Sec.35	640								X							
T13S R62W																
Sec.1	480.9								X							
Sec.2	366.72								X							
Sec.3	606.14								X							
Sec.4	604.45								X							
Sec.6	122.11								X							
Sec.7	80								X							
Sec.9	160								X							
Sec.10	480								X							
Sec.11;SE¼SW¼	40	X			X				X			X				
Sec.11;N½SW¼,SW¼SW¼,NE¼,E½NW¼,SW¼NW¼	360								X							
Sec.12	480								X							
Sec.13	360							X								
Sec.14	320								X							
Sec.15	160								X							
Sec.18	120								X							
Sec.20	160								X							
Sec.22	320								X							
Sec.23	320								X							
Sec.24	640							X								
Sec.25;SE¼	160								X							
Sec.25;NE¼NW¼,SE¼NW¼	80									0						
Sec.25;W½NW¼,NE¼	240							X								
Sec.26	640								X							
Sec.27	320								X							
Sec.31	320								X							
Sec.32	480								X							
Sec.33	160								X							
Sec.34	160								X							
Sec.35;SE¼NW¼	40								X			X				
Sec.35;N½SW¼,W½NW¼,NE¼NW¼	200								X							
T14S R62W																
Sec.5	160								X							
Sec.6	160								X							
Sec.7	469.12								X							
Sec.15	640								X							
Sec.18	343.98								X							
Sec.19	435.12								X							
Sec.20	320								X							
Sec.21;N½NE¼	80								X							
Sec.21;S½NE¼,SE¼	240							X								
Sec.22;S½,S½N½	480							X								
Sec.22.N½N½	160								X							
Sec.23;S½SW¼,NW¼SW¼	120							X								
Sec.23;E½,NW¼,NE¼SW¼	520								X							
Sec.24;NW¼SE¼,N½,N½SW¼,SE¼SW¼	480							X								
Sec.24;SW¼SW¼	40								X							
Sec.25;NE¼,NE¼NW¼	200							X								
Sec.25;S½,S½NW¼,NW¼NW¼	440								X							
Sec.26;E½,SE¼SW¼	360								X							
Sec.26;NW¼,N½SW¼,SW¼SW¼	280							X								
Sec.27	640							X								
Sec.28;W½W½	160								X							
Sec.28;E½,E½W½	480							X								
Sec.29	440								X							
Sec.30	461.92								X							
Sec.31	622.96								X							
Sec.32;N½NW¼,SW¼NW¼	120								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.32;NE¼SE¼, SW¼SE¼	80									0*						
Sec.32;SW¼,NW¼SE¼, W½NE¼,SE¼NW¼, SE¼SE¼	360							X								
Sec.33	160							X								
T15S R62W																
Sec.1	317.84								X							
Sec.5;Lot 2	38.71									0*						
Sec.5,SW¼NE¼	40							X								
Sec.6	144.43								X							
Sec.7	160								X							
Sec.8	40								X							
Sec.13	160								X							
Sec.17	160								X							
Sec.25	160								X							
T4S R63W																
Sec,6	466.35							X								
Sec.18	627							X								
Sec.22	280								X							
Sec,28	160							X								
Sec.30	633.96							X								
Sec.32	320							X								
Sec.34	320								X							
T5S R63W																
Sec.2	319.54									+						
Sec.4;E½, NW¼NW¼	360.06									+0*						
Sec.4;SW¼NW¼, W½SW¼	120							X								
Sec.6	638.51							X								
Sec.8;SW¼NE¼	40									0						
Sec.8;W½NE¼, SE¼NE¼,W½	440							X								
Sec.10;SE¼NW¼	40									+						
Sec.10;E½,W½SW¼, NE¼NW¼	440							X								
Sec.12	640								X							
Sec.14	640							X								
Sec.18	479.40							X								
Sec.20;NW¼,W½NE¼	240									0						
Sec.20;SW¼,W½SE¼	240							X								
Sec.22	640							X								
Sec.24	640							X								
Sec.26	640								X							
Sec.28;SW¼SW¼	40									0						
Sec.28;W½NW¼, NW¼SW¼	120							X								
Sec.30	640.92							X								
Sec.32;S½NW¼, E½SW¼,NW¼SE¼	280									0						
Sec.32;Remainder	360							X								
Sec.34	320								X							
T6S R63W																
Sec.10	160								X							
Sec.18	160								X							
Sec,22	320							X								
Sec.32	160								X							
T7S R63W																
Sec.6	242.80								X							
Sec.14	80								X							
Sec.22	160								X							
Sec.24	160								X							
Sec.25	360								X							
Sec.26	40								X							
Sec.29	160								X							
Sec,32	80			X			X		X			X				
Sec.33	80			X			X		X			X				
T8S R63W																
Sec.5	159.16			X			X		X			X				
T10S R63W																
Sec.11	80								X							
Sec.12	80								X							
Sec.13	160								X							
Sec.23	80								X							
Sec.28	160								X							
Sec.31	160								X							
Sec.35	320								X							
T11S R63W																
Sec.4	120								X							
Sec.8	80								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.17	80								X							
Sec.21	80								X			X				
Sec.34	40								X							
Sec.35	160								X							
T12S R63W																
Sec.15	80								X							
Sec,20	80								X							
Sec.22	320								X							
Sec.31	160								X							
Sec.35	160								X							
T13S R63W																
Sec.2	320								X							
Sec.4	39.52								X							
Sec.6	77.57								X							
Sec.8	40								X							
Sec.10	40								X							
Sec.14	320								X							
Sec.15	120								X							
Sec.25	160								X							
Sec.33	160								X							
Sec.34	160								X							
T14S R63W																
Sec.3	239.46								X							
Sec.4	239.78								X							
Sec.8	160								X							
Sec.10	400								X							
Sec.12	40								X							
Sec.14	320								X							
Sec.15	640								X							
Sec.18	40								X							
Sec.21	160								X							
Sec.23	160								X							
Sec.25	160								X							
Sec.27	160								X							
Sec.31	161.26								X							
Sec.35	320								X							
T15S R63W																
Sec.1	639.76								X							
Sec.2	319.92								X							
Sec.3	121.30							X								
Sec.4	642.80							X								
Sec.6	161.61								X							
Sec.7;N½NE¼	80								X							
Sec.7;SE¼NE¼	40							X								
Sec.8;SW¼NW¼, W½SW¼	120									0						
Sec.8;N½N½, SE¼NW¼,S½NE¼, W½SW¼	360							X								
Sec.9	160								X							
Sec.11	320								X							
Sec.12	640								X							
Sec.13	40								X							
Sec.15	160								X							
Sec.18;Lots 1thru 4, SE¼SW¼	201.60								X							
Sec.18;E½,E½NW¼, NE¼SW¼	440							X								
Sec.19	160.60								X							
Sec.20	40							X								
Sec.21;SE¼SE¼	40								X							
Sec.21;SW¼SE¼, N½,N½SE¼,S½SW¼,	520							X								
Sec.22	480								X							
Sec.23	320								X							
Sec.24	320								X							
Sec.26	80								X							
Sec.27	160								X							
Sec.28	440								X							
T3S R64W																
Sec.8;SW¼SW¼	40									+						
Sec.8;SE¼SW¼, N½SW¼,N½	440							X								
Sec.14	640								X							
Sec,18	171.36							X								
Sec.24	160								X							
Sec.26;S½SW¼, NW¼SW¼	120									+						
Sec.26;NE¼SW¼, NE¼	200							X								
Sec.34;SW¼SW¼	40									+						

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.12;E½,N½NW¼,S½SW¼	480									+						
Sec.12	160							X								
Sec.14	640							X								
Sec.24	640							X								
T13S R64W																
Sec.1	40								X							
Sec.11	80								X							
Sec.12	120								X							
Sec.25	80								X							
Sec.27	160								X							
Sec.31	80								X							
Sec.34	40	X			X				X			X				
T14S R64W																
Sec.5	242.07								X							
Sec.6	446.21								X							
Sec.7	293.65								X							
Sec.8	120								X							
Sec.9	160								X							
Sec.10	40								X							
Sec.14	160								X							
Sec.17	80								X							
Sec.20;E½NE¼,SW¼NE¼	120								X							
Sec.20;E½SW¼.SE¼NW¼	120							X								
Sec.28	240								X							
Sec.29	80							X								
Sec.31	160								X							
Sec.32	520								X							
Sec.33	400								X							
Sec.35	160								X							
T15S R64W																
Sec.1	241.12								X							
Sec.3	160								X							
Sec.4	40.68								X							
Sec.5	80.60								X							
Sec.6	40.21	X			X				X			X				
Sec.12	160								X							
Sec.13	160								X							
Sec.15;N½SW¼,E½NW¼,SW¼NW¼	200								X							
Sec.15;SW¼SE¼	40	X			X				X			X				
Sec.24	160								X							
T3S R65W																
Sec.4	312								X							
Sec.6	156.84							X								
Sec.10	320							X								
Sec.22	160							X								
T4S R65W																
Sec.2	155.32							X								
Sec.10	160							X								
Sec.14	320							X								
sec.20	80							X								
T14S R65W																
Sec.1	40.3								X							
Sec.21	520							X								
Sec.26;S½NE¼	80								X							
Sec.26;SW¼NW¼	40									O*						
Sec.26;SE¼NW¼,NE¼SW¼	80							X								
Sec.28	200							X								
Sec.29;NN¼SW¼	40									+						
Sec.29;NE¼,N½SE¼,NE¼SW¼	280							X								
Sec.30	171.48							X								
Sec.31	617.36							X								
Sec.32;SE¼SW¼	40									O*						
Sec.32;SW¼SW¼,NW¼,W½NE¼,N½SW¼,NW¼SE¼	400							X								
Sec.34	240							X								
T10S R61W																
Sec.2;N½NE¼,SE¼NE¼	121.06								X							
Sec.2;N½NW¼,SW¼NE¼	120.78							X								
Sec.3	160							X								
Sec.5	80							X								
Sec.6	166.62							X								
Sec.7	120								X							
Sec.8;NE¼SE¼	40									+						

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 1

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.8;S½S½,N½SW¼,NW¼SE¼,SE¼NW¼	320							X								
Sec.9	160							X								
Sec.10	320							X								
Sec.11;NW¼SE¼	40									+						
Sec.34;SE¼SW¼,N½SW¼	120							X								
T4S R64W																
Sec.14;NW¼,SE¼	320									O						
Sec.14;NE¼	160							X								
Sec.20	320							X								
Sec.24;W½NW¼	80									O						
Sec.24;E½NW¼,NE¼	240							X								
Sec.26;S½SW¼	80									O						
Sec.26;S½SE¼	80							X								
Sec.31;E½	320							X								
Sec.31;W½	332.62								X							
Sec.32	480							X								
T5S R64W																
Sec.2	320							X								
Sec.4	279.14							X								
Sec.6;E½	320							X								
Sec.6;W½	320								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

187,317.06 acres

18. Locatable Minerals

	Potential High	Moderate	Low
Available	0	0	86,413.92
Concern Area	0	0	36,634.55
Closed	0	0	49,042.23

19. Salable Minerals

	Potential High	Moderate	Low
Open	2,327.79	11,532.41	73,835.88
Concern Area	220	3,621.03	36,138.31
Closed	1,820.96	24,141.57	18,385.28

20. Coal

	Potential High	Moderate	Low	None
Suitable	3,926.84	0	0	0
Open	0	7,737.13	469.04	0
Unsuitable	724.85	0	0	0
None	0	0	0	167,045.68

21. Oil and Gas

	Potential High	Moderate	Low
Standard	87,775.55	48,343.27	0
Seasonal	36,472.36	480	0
Yearlong	255.17	20	0
Open	6,713.83	0	0
Unsuitable	0	0	0

APPENDIX C

MANAGEMENT OF SUBSURFACE MINERAL ESTATE

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
T4N R42W																
Sec.5	39.25		X			X					X		B			
Sec.19	40.22		X			X					X		B			
Sec.27	88.17		X			X					X		B			
Sec.28	80		X			X					X		B			
Sec.29	200		X			X					X		B			
Sec.30	200		X			X					X		B			
Sec.31	80		X			X					X		B			
Sec.33	80		X			X					X		B			
Sec.34	86.73		X			X					X		B			
T3N R42W																
Sec.3	43.61		X			X					X		B			
Sec.6	158.78		X			X					X		B			
Sec.15	87.24		X			X					X		B			
Sec.18	40		X			X					X		B			
Sec.19	79.30		X			X					X		B			

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.31	80		X			X					X		8			
Sec.32	80		X			X					X		8			
T8N R43W																
Sec.5	423.30			X			X				X	X				
T6N R43W																
Sec.14	40		X			X					X		8			
Sec.15	240		X			X					X		8			
Sec.19	40		X			X					X		8			
Sec.21	40												8			
Sec.22	40		X			X					X		8			
Sec.27	80		X			X					X		8			
Sec.28	80		X			X					X		8			
Sec.29	40		X			X					X		8			
Sec.30	80		X			X					X		8			
Sec.31	39.86		X			X					X		8			
Sec.33	160		X			X					X		8			
Sec.34	160		X			X					X		8			
T5N R43W																
Sec.1	160		X			X					X		8			
Sec.2	79.68		X			X					X		8			
Sec.4	40			X			X				X		8			
Sec.5	200			X			X				X		8			
Sec.6	239.21		X			X					X		8			
Sec.7	79.49		X			X					X		8			
Sec.12	80		X			X					X		8			
Sec.17	160		X			X					X		8			
Sec.18	40		X			X					X		8			
Sec.19	120		X			X					X		8			
Sec.20	280		X			X					X		8			
Sec.25	160		X			X					X		8			
Sec.28	120		X			X					X		8			
Sec.29	80		X			X					X		8			
Sec.30	240		X			X					X		8			
T4N R43W																
Sec.7	39.21		X			X					X		8,			
Sec.10	80		X			X					X		8			
Sec.14	80		X			X					X		8			
Sec.15	80		X			X					X		8			
Sec.18	198.17		X			X					X		8			
Sec.19	188.59		X			X					X		8			
Sec.24	120		X			X					X		8			
Sec.26	80		X			X					X		8			
Sec.30	40		X			X					X		8			
Sec.31	80												8			
Sec.33	160		X			X					X		8			
Sec.34	40		X			X					X		8			
T3N R43W																
Sec.1	160		X			X					X		8			
Sec.4	40.59												8			
Sec.5	280		X			X					X		8			
Sec.6	40		X			X					X		8			
Sec.7	240		X			X					X		8			
Sec.8	240		X			X					X		8			
Sec.9	200		X			X					X		8			
Sec.11	160		X			X					X		8			
Sec.13	280		X			X					X		8			
Sec.14;SE¼SE¼	40		X			X					X		8			
Sec.14;SW¼SE¼	40												8			
Sec.15	160		X			X					X		8			
Sec.17	80		X			X					X		8			
Sec.18	36.83		X			X					X		8			
Sec.20	40		X			X					X		8			
Sec.21	40		X			X					X		8			
Sec.23	40												8			
Sec.28	40		X			X					X		8			
Sec.31	40		X			X					X		8			
T2N R43W																
Sec.3	80		X			X					X		8			
Sec.7	120		X			X					X		8			
Sec.8	40		X			X					X		8			
Sec.9	80		X			X					X		8			
Sec.11	40		X			X					X		8			
Sec.14	40		X			X					X		8			
Sec.17	40		X			X					X		8			
		LOCATABLE			SALABLE			COAL				OIL AND GAS				

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.30	40		X			X					X		8			
Sec.32	40		X			X					X		8			
Sec.34	40		X			X					X		8			
Sec.35	80		X			X					X		8			
T11N R44W																
Sec.10	320	X			X						X	X				
Sec.30;Lots 7&8	37.80											X				
Sec.30;Lot 1 N½N½,SE¼NE¼	184.35	X			X						X	X				
T8N R44W																
Sec.21	160			X			X				X	X				
Sec.22	320			X			X				X	X				
T6N R44W																
Sec.19	161.39		X			X					X		8			
Sec.27	120		X			X					X		8			
Sec.28	40		X			X					X		8			
Sec.29	80		X			X					X		8			
Sec.30	120		X			X					X		8			
Sec.32	120		X			X					X		8			
T5N R44W																
Sec.2	80		X			X					X		8			
Sec.4	362.24		X			X					X		8			
Sec.5	361.86		X			X					X		8			
Sec.6	40		X			X					X		8			
Sec.7	80.01		X			X					X		8			
Sec.8	240		X			X					X		8			
Sec.9	440		X			X					X		8			
Sec.10	80		X			X					X		8			
Sec.11	40		X			X					X		8			
Sec.13	160		X			X					X		8			
Sec.14	40		X			X					X		8			
Sec.15	80		X			X					X		8			
Sec.17	160		X			X					X		8			
Sec.18	200.90		X			X					X		8			
Sec.20;SE¼NW¼	40												8			
Sec.20;SW¼NW¼,S½, S½NE¼,NE¼NE¼,	480		X			X					X		8			
Sec.21	280		X			X					X		8			
Sec.22	440		X			X					X		8			
Sec.24	120		X			X					X		8			
Sec.26	160		X			X					X		8			
Sec.27	120		X			X					X		8			
Sec.28	40		X			X					X		8			
Sec.29	240		X			X					X		8			
Sec.30	119.38		X			X					X		8			
Sec.32	40		X			X					X		8			
Sec.33	160		X			X					X		8			
Sec.34	120		X			X					X		8			
Sec.35	80		X			X					X		8			
T4N R44W																
Sec.1	182.92		X			X					X		8			
Sec.2	40		X			X					X		8			
Sec.3	52.86		X			X					X		8			
Sec.4	92.80		X			X					X		8			
Sec.6	200.38		X			X					X		8			
Sec.7	120		X			X					X		8			
Sec.9	360		X			X					X		8			
Sec.10	400		X			X					X		8			
Sec.11	160		X			X					X		8			
Sec.12	160		X			X					X		8			
Sec.13	40		X			X					X		8			
Sec.17	160		X			X					X		8			
Sec.18	40		X			X					X		8			
Sec.19	41.62		X			X					X		8			
Sec.21	40		X			X					X		8			
Sec.29	160		X			X					X		8			
Sec.30	160		X			X					X		8			
T3N R44W																
Sec.8	80		X			X					X		8			
Sec.9	40		X			X					X		8			
Sec.11	80		X			X					X		8			
Sec.12	160		X			X					X		8			
Sec.17	40		X			X					X		8			
Sec.18	80		X			X					X		8			
Sec.19	76.56		X			X					X		8			
		LOCATABLE			SALABLE			COAL				OIL AND GAS				

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.29	79.52		X			X					X		8			
T2N R44W																
Sec.5	80		X			X					X		8			
Sec.6	80		X			X					X		8			
Sec.8	80		X			X					X		8			
Sec.9	200		X			X					X		8			
Sec.10	80		X			X					X		8			
Sec.15	80		X			X					X		8			
Sec.17	80		X			X					X		8			
Sec.22	40		X			X					X		8			
Sec.27	80		X			X					X		8			
Sec.32	40		X			X					X		8			
T8N R45W																
Sec.26	160			X			X				X	X				
T6N R45W																
Sec.10	40		X			X					X		8			
Sec.11	80		X			X					X		8			
Sec.14	80		X			X					X		8			
Sec.21	80		X			X					X		8			
Sec.23	200		X			X					X		8			
Sec.24	160		X			X					X		8			
Sec.25	160		X			X					X		8			
Sec.26	240		X			X					X		8			
Sec.27	320		X			X					X		8			
Sec.35	120		X			X					X		8			
T5N R45W																
Sec.7	40												8			
Sec.8	80		X			X					X		8			
Sec.9	40		X			X					X		8			
Sec.11	160		X			X					X		8			
Sec.13	240		X			X					X		8			
Sec.14	160		X			X					X		8			
Sec.17	80		X			X					X		8			
Sec.18	80												8			
Sec.20	80		X			X					X		8			
Sec.21	40		X			X					X		8			
Sec.23	80		X			X					X		8			
Sec.24	240		X			X					X		8			
Sec.27	120		X			X					X		8			
Sec.28	80		X			X					X		8			
Sec.29	320		X			X					X		8			
Sec.30	120		X			X					X		8			
Sec.31	240.28		X			X					X		8			
Sec.33	320		X			X					X		8			
Sec.34	200		X			X					X		8			
T4N R45W																
Sec.1	163.20		X			X					X		8			
Sec.2	200.87		X			X					X		8			
Sec.3	372.95		X			X					X		8			
Sec.4;E½W½, NW¼NW¼	226.17		X			X					X		8			
Sec.;SW¼NW¼, W½E½,SE¼SE¼	253.17												8			
Sec.5	519.02		X			X					X		8			
Sec.6	306.49		X			X					X		8			
Sec.7	400		X			X					X		8			
Sec.8	80		X			X					X		8			
Sec.9	120		X			X					X		8			
Sec.10	320		X			X					X		8			
Sec.11	240		X			X					X		8			
Sec.12	80		X			X					X		8			
Sec.13	280		X			X					X		8			
Sec.14	400		X			X					X		8			
Sec.17	80		X			X					X		8			
Sec.18	120.92		X			X					X		8			
Sec.21	200		X			X					X		8			
Sec.22	40		X			X					X		8			
Sec.24	80		X			X					X		8			
Sec.26	40		X			X					X		8			
Sec.27	80		X			X					X		8			
Sec.28	360		X			X					X		8			
Sec.29	640		X			X					X		8			
Sec.30	446.87		X			X					X		8			
Sec.31	450.88		X			X					X		8			
Sec.32	240		X			X					X		8			

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.33	80		X			X					X		8			
Sec.34	120		X			X					X		8			
T3N R45W																
Sec.2	80		X			X					X		8			
Sec.3	240.36		X			X					X		8			
Sec.4	241.07		X			X					X		8			
Sec.5	322.45		X			X					X		8			
Sec.6	328.39		X			X					X		8			
Sec.7	80.98		X			X					X		8			
Sec.8:NE¼SE¼, W½SW¼, E½NE¼	200		X			X					X		8			
Sec.8;NE¼NW¼	40												8			
Sec.9	236.40		X			X					X		8			
Sec.17	200		X			X					X		8			
Sec.18	40		X			X					X		8			
Sec.19;W½SW¼, SE¼SW¼	113.75		X			X					X		8			
Sec.19;S½SE¼	80			X			X				X		8			
Sec.20;N½NE¼, NW¼SE¼	120		X			X					X		8			
Sec.20;SW¼	160			X			X				X		8			
Sec.21	240		X			X					X		8			
Sec.22	79.16		X			X					X		8			
Sec.23	120		X			X					X		8			
Sec.26	40		X			X					X		8			
Sec.27	240		X			X					X		8			
Sec.28	80		X			X					X		8			
Sec.30;W½NW¼, NE¼NW¼	112.56		X			X					X		8			
Sec.30;N½NE¼	80			X			X				X		8			
T2N R45W																
Sec.4	160.04		X			X					X		8			
Sec.6	141.34		X			X					X		8			
Sec.7	109.89		X			X					X		8			
Sec.9	120		X			X					X		8			
Sec.11	120		X			X					X		8			
Sec.12	80		X			X					X		8			
Sec.14	80		X			X					X		8			
Sec.18	74.52												8			
Sec.19	148.00		X			X					X		8			
Sec.21	120		X			X					X		8			
Sec.25	80		X			X					X		8			
Sec.26	40		X			X					X		8			
Sec.28	80		X			X					X		8			
Sec.30	147.85		X			X					X		8			
T1N R45W																
Sec.25	40		X			X					X		8			
T8N R46W																
Sec.11	160			X	X						X	X				
Sec.12	160			X	X						X	X				
T6N R46W																
Sec.17	160			X	X						X	X				
T5N R46W																
Sec.25	40		X			X					X		8			
T4N R46W																
Sec.1	80		X			X					X		8			
Sec.35	40		X			X					X		8			
T3N R46W																
Sec.1	359.98		X			X					X		8			
Sec.2	79.98		X			X					X		8			
Sec.12	80		X			X					X		8			
Sec.13	240		X			X					X		8			
Sec.24	80		X			X					X		8			
Sec.25	40		X			X					X		8			
Sec.28	160		X			X					X		8			
T2N R46W																
Sec.1	240.12		X			X					X		8			
Sec.12;SE¼NE¼	40															
Sec.12;NW¼SW¼	40		X			X					X		8			
T1N R46W																
Sec.19	40	X			X						X	X				
T10N R47W																
Sec.19	633.88	X			X						X	X				
Sec.30	154.91	X			X						X	X				
T9N R47W																
Sec.35	320			X			X				X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T8N R47W																
Sec.32	160			X			X				X	X				
T7N R47W																
Sec.9	160			X			X				X	X				
Sec.18	162.60			X			X				X	X				
Sec.19	328.08			X			X				X	X				
T6N R47W																
Sec.5	160			X			X				X	X				
Sec.7	30			X			X				X	X				
Sec.8	30			X			X				X	X				
Sec.28	20			X			X				X	X				
T4N R47W																
Sec.27	160			X			X				X	X				
Sec.28	160			X			X				X	X				
T1N R47W																
Sec.29	80	X			X						X	X				
T10N R48W																
Sec.13	40	X			X						X	X				
Sec.21	320		X			X					X	X				
Sec.23	80	X			X						X	X				
Sec.24	480	X			X						X	X				
T6N R48W																
Sec.8	160			X			X				X	X				
T5N R48W																
Sec.20	160			X			X				X	X				
Sec.21	160			X			X				X	X				
T10N R49W																
Sec.33	240	X			X						X	X				
Sec.34	40	X			X						X	X				
T9N R49W																
Sec.4	401.60	X			X						X	X				
Sec.6	326.70	X			X						X	X				
Sec.9	320	X			X						X	X				
T5N R49W																
Sec.2	321.28			X			X				X	X				
T4N R49W																
Sec.17	320			X			X				X	X				
Sec.35	160			X			X				X	X				
T3N R49W																
Sec.25	80			X			X				X	X				
T2N R49W																
Sec.28	160			X			X				X	X				
T1N R49W																
Sec.7	160	X			X						X	X				
Sec.10	80	X			X						X	X				
Sec.13	160	X			X						X	X				
Sec.14	80	X			X						X	X				
Sec.18	160	X			X						X	X				
Sec.23	320	X			X						X	X				
Sec.26	80	X			X						X	X				
T9N R50W																
Sec.11	160	X			X						X	X				
Sec.12	320	X			X						X	X				
Sec.13	120	X			X						X	X				
Sec.14	240	X			X						X	X				
Sec.15	640	X			X						X	X				
Sec.20	160	X			X						X	X				
Sec.21	120	X			X						X	X				
Sec.22	80	X			X						X	X				
Sec.29	240	X			X						X	X				
Sec.30	641.36	X			X						X	X				
Sec.31	361.76	X			X						X	X				
Sec.35	320			X			X				X	X				
T2N R50W																
Sec.11	320			X			X				X	X				
Sec.23	80	X			X						X	X				
Sec.26	80	X			X						X	X				
T9N R51W																
Sec.26;South of HWY.	60	X			X						X	X				
Sec.34; South of HWY.	300	X			X						X	X				
T8N R51W																
Sec.2	380.22	X			X						X	X				
Sec.3	80	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.7;South of HWY.	240	X			X						X	X				
Sec.8;South of HWY.	60	X			X						X	X				
Sec.9;NE¼SW¼	40		X			X					X	X				
Sec.9;Remainder	600	X			X						X	X				
Sec.10	480	X			X						X	X				
Sec.11	400	X			X						X	X				
Sec.12	600	X			X						X	X				
Sec.17;S½NE¼, SE¼NW¼	120		X			X					X	X				
Sec.17	200	X			X						X	X				
Sec.18;SE¼	160		X			X					X	X				
Sec.18	163.48	X			X						X	X				
T5N R51W																
Sec.24	160			X			X				X	X				
Sec.25	160			X			X				X	X				
T2N R51W																
Sec.15	160			X			X				X	X				
T7N R52W																
Sec.28	320	X			X						X	X				
Sec.33	400	X			X						X	X				
Sec.34	40	X			X						X	X				
T6N R52W																
Sec.2	40	X			X						X	X				
Sec.3	440	X			X						X	X				
Sec.4	320	X			X						X	X				
Sec.19	80	X			X						X	X				
Sec.20	200											X				
Sec.21	240	X			X						X	X				
Sec.29	80	X			X						X	X				
Sec.31	40	X			X						X	X				
Sec.32	40	X			X						X	X				
Sec.33	40	X			X						X	X				
T5N R52W																
Sec.4	40	X			X						X	X				
Sec.9	40	X			X						X	X				
Sec.10	60	X			X						X	X				
Sec.26	40	x			x						x	x				
T4N R52W																
Sec.4	80	X			X						X	X				
T3N R52W																
Sec.28	160			X			X				X	X				
T6N R53W																
Sec.24	80	X			X						X	X				
Sec.25	160	X			X						X	X				
Sec.26	240	X			X						X	X				
Sec.33;South of HWY.	300	X			X						X	X				
Sec.34	320	X			X						X	X				
Sec.35	320	X			X						X	X				
T5N R53W																
Sec.2	319.28	X			X						X	X				
Sec.3	319.88	X			X						X	X				
Sec.4	480.34	X			X						X	X				
Sec.5;South of HWY.	180	X			X						X		5			
Sec.8	320	X			X						X	X				
Sec.9	320	X			X						X	X				
Sec.17	320	X			X						X	X				
Sec.18	317.65	X			X						X	X				
Sec.19	318.56	X			X						X	X				
Sec.20	320	X			X						X	X				
Sec.21	400	X			X						X	X				
Sec.22	120	X			X						X	X				
Sec.29	320	X			X						X	X				
Sec.30	320	X			X						X	X				
Sec.32	160	X			X						X	X				
T4N R53W																
Sec.6	110.85	X			X						X	X				
Sec.15	75.70	X			X						X	X				
Sec.18	75.31	X			X						X	X				
T3N R53W																
Sec.9	40	X			X						X	X				
T2N R53W																
Sec.33	120	X			X						X	X				
T5N R54W																
Sec.24	320	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.26	80	X			X						X	X				
Sec.27	160	X			X						X	X				
Sec.34	320	X			X						X	X				
T4N R54W																
Sec.5;South of HWY.	609.58	X			X						X	X				
Sec.22	80	X			X						X	X				
T3N R54W																
Sec.30	76.49	X			X						X	X				
T2N R54W																
Sec.7	320	X			X						X	X				
T4N R55W																
Sec.13	240	X			X						X	X				
Sec.23	80	X			X						X	X				
Sec.24	160	X			X						X	X				
Sec.26	400	X			X						X	X				
Sec.27	160	X			X						X	X				
Sec.28	120	X			X						X	X				
Sec.35	80	X			X						X	X				
T3N R55W																
Sec.2	240.75	X			X						X	X				
Sec.3	240	X			X						X	X				
Sec.4	160.51	X			X						X	X				
Sec.5	281.50	X			X						X	X				
Sec.6	163.44	X			X						X	X				
Sec.7	163.15	X			X						X	X				
Sec.8	160	X			X						X	X				
Sec.9	40	X			X						X	X				
Sec.10	320	X			X						X	X				
Sec.11	320	X			X						X	X				
Sec.13	80	X			X						X	X				
Sec.14	80	X			X						X	X				
Sec.23	80	X			X						X	X				
Sec.24	80	X			X						X	X				
Sec.27	80	X			X						X	X				
Sec.28	80	X			X						X	X				
Sec.32	320	X			X						X	X				
Sec.33	40	X			X						X	X				
Sec.34	240	X			X						X	X				
Sec.35	80	X			X						X	X				
T2N R55W																
Sec.4	119.58	X			X						X	X				
Sec.5	160	X			X						X	X				
Sec.8	80	X			X						X	X				
Sec.14	80	X			X						X	X				
Sec.15	240	X			X						X	X				
Sec.24	320	X			X						X	X				
T3N R56W																
Sec.12	80	X			X						X	X				
Sec.26;W½,W½SE¼, SW¼NE¼	440	X			X						X	X				
Sec.26;NW¼NE¼	40											X				
Sec.27	320	X			X						X	X				
Sec.28	320	X			X						X	X				
Sec.33	320	X			X						X	X				
Sec.34	560	X			X						X	X				
Sec.35	360	X			X						X	X				
T2N R56W																
Sec.2	79.87	X			X						X	X				
Sec.3;N½,N½S½	479.12	X			X						X	X				
Sec.3;SW¼SW¼	40											X				
Sec.4;NW¼,N½SE¼	239.28	X			X						X	X				
Sec.4;S½SE¼	80											X				
Sec.5	80	X			X						X	X				
Sec.7;NE¼SE¼, SE¼NE¼,SW¼,SW¼NW¼, W½SE¼	396.40	X			X						X	X				
Sec.7,SW¼NE¼	40											X				
Sec.8	160	X			X						X	X				
Sec.9;W½SW¼, E½NW¼	160	X			X						X	X				
Sec.9;NE¼	160											X				
Sec.10	40											X				
Sec.15	40											X				
Sec.17	40	X			X						X	X				
Sec.18	79.47	X			X						X	X				
Sec.22	40											X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.30	119.47	X			X						X	X				
Sec.33	400	X			X						X	X				
Sec.34	80	X			X						X	X				
T1N R56W																
Sec.5	120	X			X						X	X				
Sec.8	40	X			X						X	X				
T2N R57W																
Sec.1	316.80	X			X						X	X				
Sec.12	120	X			X						X	X				
Sec.26	160	X			X						X	X				
Sec.27	160	X			X						X	X				
T1N R57W																
Sec.21	40											X				
Sec.22	40											X				
T3N R58W																
Sec.27	80	X			X						X	X				
Sec.28	80	X			X						X	X				
Sec.29	320	X			X						X	X				
Sec.32	320	X			X						X	X				
Sec.33	320	X			X						X	X				
T2N R58W																
Sec.1	40											X				
Sec.2	160	X			X						X	X				
Sec.3	320.52	X			X						X	X				
Sec.4	361.44	X			X						X	X				
Sec.8	80	X			X						X	X				
Sec.9	40	X			X						X	X				
Sec.10	160	X			X						X	X				
Sec.18	79.62	X			X						X	X				
Sec.19	119.33	X			X						X	X				
Sec.31	317.88	X			X						X	X				
Sec.32	80											X				
T1N R58W																
Sec.6	318.20	X			X						X	X				
Sec.26	40											X				
T3N R59W																
Sec.7	40	X			X						X	X				
Sec.17	160			X			X				X	X				
Sec.18;E½E½	160			X			X				X	X				
Sec.18;SWSE	40	X			X						X	X				
Sec.22	160	X			X						X	X				
Sec.23	240	X			X						X	X				
Sec.25	320	X			X						X	X				
Sec.26	80	X			X						X	X				
Sec.31	40											X				
Sec.35	160	X			X						X	X				
T2N R59W																
Sec.2	160	X			X						X	X				
Sec.3	159.40	X			X						X	X				
Sec.4	159.53	X			X						X	X				
Sec.13	40											X				
Sec.24	200	X			X						X	X				
Sec.25	160	X			X						X	X				
Sec.26	80	X			X						X	X				
T3N R60W																
Sec.19	311.65	X			X						X	X				
Sec.33	320											X				
T2N R60W																
Sec.4	80.36			X			X				X	X				
T1N R60W																
Sec.5	160			X			X				X	X				
Sec.19	320.77								X							
Sec.20	520								X							
Sec.21	240								X							
Sec.29;E½NE¼,NE¼SE¼, SW¼SE¼,SE¼SW¼	200									0*						
Sec.29;W½NE¼,E½NW¼, SE¼SE¼,NW¼SE¼,NE¼SW¼	280							X								
Sec.30;NE¼NW¼	40								X							
Sec.30;W½W½,SE¼NW¼, E½SW¼	282.00							X								
Sec.31;N½,SW¼, NW¼SE¼,SE¼SE¼	561.28							X								
Sec.31;NE¼SE¼, SW¼SE¼	80									0*						
Sec.32;E½SE¼	80									0*						
Sec.32;SW¼, W½SE¼	240							X								

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T3N R61W																
Sec.18	38.33	X			X						X	X				
Sec.23	320	X			X						X	X				
Sec.24	160	X			X						X	X				
Sec.26	160	X			X						X	X				
Sec.27	320	X			X				X			X				
Sec.28	320	X			X				X			X				
Sec.29	80	X			X				X			X				
Sec.30	320	X			X				X			X				
Sec.31	80	X			X				X			X				
Sec.32	240	X			X				X			X				
Sec.34;S½SE¼, E½SW¼	160	X			X				X			X				
Sec.34;NW¼SE¼	40											X				
Sec.35	80	X			X				X			X				
T2N R61W																
Sec.3	401.70	X			X				X			X				
Sec.11	40	X			X						X	X				
Sec.19	35.4	X			X				X			X				
T1N R61W																
Sec.25;NE¼NW¼	40									+						
Sec.25;Remainder	600							X								
Sec.26;NW¼NE¼	40								X							
Sec.26;W½SE¼, E½E½, SW¼NE¼	440							X								
Sec.34	160								X							
Sec.35;NW¼	160								X							
Sec.35;NE¼	160							X								
T4N R62W																
Sec.25	120											X				
T3N R62W																
Sec.1	160	X			X						X	X				
Sec.13	280	X			X						X	X				
Sec.19;E½SW¼, W½SE¼	160								X			X				
Sec.19;W½SW¼	86.40	X			X				X			X				
Sec.20	200	X			X				X			X				
Sec.24	120	X			X				X			X				
Sec.25	40	X			X			X				X				
Sec.29	360	X			X				X			X				
Sec.30	173.84	X			X				X			X				
T2N R62W																
Sec.2	80	X			X			X				X				
Sec.12	80	X			X				X			X				
Sec.24	160	X			X				X			X				
Sec.25	120	X			X				X			X				
T3N R63W																
Sec.4	320	X			X				X			X				
Sec.6	159.08	X			X				X			X				
Sec.32	160	X			X				X			X				
T2N R63W																
Sec.8	280	X			X			X				X				
T1S R42W																
Sec.9	40	X			X						X	X				
Sec.14	59.40	X			X						X	X				
Sec.19	160	X			X						X	X				
Sec.21	200	X			X						X	X				
T2S R42W																
Sec.7	40											X				
Sec.10	40	X			X						X	X				
Sec.15	40	X			X						X	X				
Sec.18	120	X			X						X	X				
T3S R42W																
Sec.22	6.50											X				
T4S R42W																
Sec.7	160			X			X				X	X				
Sec.9	120		X			X					X		9			
Sec.18	80.87			X			X				X	X				
Sec.27	33.26												9			
T5S R42W																
Sec.15	40											X				
Sec.20	11.64	X			X						X	X				
Sec.21	160	X			X						X	X				
Sec.30;N½NE¼, NE¼NW¼, SE¼NE¼	154.05			X			X				X	X				
Sec.30;Lot 9	10.34											X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T5½S R42W																
Sec.31	47.39	X			X						X	X				
T7S R42W																
Sec.2	9.10											X				
Sec.30	159.77			X			X				X	X				
T8S R42W																
Sec.31	160			X			X				X	X				
T9S R42W																
Sec.7	159.96			X			X				X	X				
T10S R42W																
Sec.13	130.68			X			X				X	X				
T12S R42W																
Sec.2	40.76											X				
Sec.34	79.06	X			X						X	X				
T1S R43W																
Sec.10	40	X			X						X	X				
T2S R43W																
Sec.18	124.24											X				
Sec.20	80											X				
Sec.21	120											X				
Sec.24	120	X			X						X	X				
Sec.25	40	X			X						X	X				
Sec.32	80	X			X						X	X				
Sec.33	40	X			X						X	X				
Sec.35	40											X				
T3S R43W																
Sec.3	40	X			X						X	X				
Sec.5	40	X			X						X	X				
Sec.7	160	X			X						X	X				
Sec.8	240	X			X						X	X				
Sec.18	203.93	X			X						X	X				
T4S R43W																
Sec.13	80			X			X				X	X				
Sec.33	80		X			X					X		8			
T5S R43W																
Sec.1	40		X			X					X		8			
Sec.2	120		X			X					X		8			
Sec.4	12			X		X					X	X				
Sec.8	79.56			X		X					X				X	
Sec.9	633.79			X		X					X				X	
Sec.10	3.38			X		X					X					
Sec.11	39.7		X			X					X		8			
Sec.15	521.56			X		X					X				X	
Sec.16	638.9			X			X				X				X	
Sec.17	400.95			X		X					X				X	
Sec.18	121.98			X		X					X				X	
Sec.19	625.39			X			X				X				X	
Sec.20	653.95			X			X				X				X	
Sec.21	650.19			X			X				X				X	
Sec.22	646.91			X		X					X				X	
Sec.23	39.91			X		X					X				X	
Sec.28	320.94			X		X					X				X	
Sec.29	324.48			X		X					X				X	
Sec.30;Lots 1 thru 7,11,12,&17	245.17			X			X				X			X		
Sec.30;Lots 8,9, 10,13 & 16	152.87			X		X					X				X	
Sec.30;SW¼SE¼	40												8			
T6S R43W																
Sec.1	160			X			X				X	X				
Sec.6	31.71	X			X						X	X				
T7S R43W																
Sec.15	160			X			X				X	X				
Sec.22	160			X			X				X	X				
Sec.25	160			X			X				X	X				
Sec.28	160			X			X				X	X				
Sec.31	160.18			X			X				X	X				
Sec.32	160			X			X				X	X				
T9S R43W																
Sec.19	160			X			X				X	X				
T10S R43W																
Sec.13	160			X			X				X	X				
Sec.25	160			X			X				X	X				
T11S R43W																

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.18	160			X			X				X	X				
Sec.24	320			X			X				X	X				
T12S R43W																
Sec.34	312.05			X			X				X	X				
T15S R43W																
Sec.14	320			X			X				X	X				
T2S R44W																
Sec.11	40											X				
Sec.12	40											X				
Sec.14	40											X				
Sec.31	45.10	X			X						X	X				
Sec.33	40											X				
T3S R44W																
Sec.2	40	X			X						X	X				
Sec.9	40											X				
Sec.10	80	X			X						X	X				
Sec.11	80	X			X						X	X				
Sec.13	160	X			X						X	X				
Sec.17	40	X			X						X	X				
Sec.21	80	X			X						X	X				
Sec.23	160	X			X						X	X				
Sec.29	160	X			X						X	X				
Sec.30	320	X			X						X	X				
Sec.31	172.20	X			X						X	X				
T5S R44W																
Sec.3	40.61												8			
Sec.10	117.79												8			
Sec.13	78.55			X			X				X				X	
Sec.14	53.78												8			
Sec.21	6.30												5			
Sec.22	9.89												5			
Sec.23	0.91											X				
Sec.24	510.23			X			X				X				X	
Sec.25	240.28			X			X				X				X	
Sec.28	2.99												5			
Sec.31	9.40												5			
Sec.32;Lots 2 6 3	3.61												5			
Sec.32;SE¼SW¼, SW¼SE¼	77.90											X				
Sec.35	13.97											X				
Sec.36	73.39			X			X				X				X	
T5½S R44W																
Sec.31	145.57	X			X						X	X				
Sec.32	40											X				
T6S R44W																
Sec.5;SE¼	160			X			X				X	X				
Sec.5;W½	381.03	X			X						X	X				
Sec.6;SE¼SE¼	40	X			X						X	X				
Sec.6;Lot 1	30.46											X				
Sec.7	232.10	X			X						X	X				
Sec.8	160			X			X				X	X				
Sec.12	200	X			X						X	X				
Sec.14;NE¼SW¼	40	X			X						X	X				
Sec.14;SE¼SE¼	40											X				
Sec.23;NE¼NE¼	40											X				
Sec.23;SE¼SW¼	40	X			X						X	X				
Sec.34	40	X			X						X	X				
Sec.35	160			X			X				X	X				
T7S R44W																
Sec.4	40	X			X						X	X				
Sec.9;W½ NW¼NW¼	20			X			X				X			X		
Sec.9;E½ NW¼SW¼	20		X			X					X	X				
Sec.10	320			X			X				X	X				
Sec.19	238.11			X			X				X	X				
Sec.20	320			X			X				X	X				
T9S R44W																
Sec.23	160			X			X				X	X				
Sec.28	160			X			X				X	X				
T11S R44W																
Sec.5	22.76											X				
T12S R44W																
Sec.6	44.97											X				
Sec.18	162.63			X			X				X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T16S R44W																
Sec.2	170.38	X			X						X	X				
T2S R45W																
Sec.7	41.75	X			X						X	X				
Sec.34	160			X			X				X	X				
T3S R45W																
Sec.1	40	X			X						X	X				
Sec.10	40	X			X						X	X				
Sec.11	80	X			X						X	X				
Sec.12	80	X			X						X	X				
Sec.13	80	X			X						X	X				
Sec.20	160	X			X						X	X				
Sec.22	40	X			X						X	X				
Sec.27	200	X			X						X	X				
Sec.34	40	X			X						X	X				
T4S R45W																
Sec.1	80.08	X			X						X	X				
Sec.2	80	X			X						X	X				
Sec.3	80	X			X						X	X				
Sec.9	40	X			X						X	X				
Sec.10	80	X			X						X	X				
T5S R45W																
Sec.8	158.18			X			X				X	X				
Sec.9	157.43			X			X				X	X				
T5½S R45W																
Sec.33	47.19	X			X						X	X				
T6S R45W																
Sec.1;SW¼NE¼, E½E½,W½SW¼	310.03			X			X				X	X				
Sec.3	40	X			X						X	X				
Sec.7	36.04											X				
Sec.9	40	X			X						X	X				
Sec.10	160	X			X						X	X				
Sec.11	40	X			X						X	X				
Sec.12	80	X			X						X	X				
Sec.14	320			X			X				X	X				
Sec.31	40	X			X						X	X				
T7S R45W																
Sec.6;NE¼NE¼	40	X			X						X	X				
Sec.6;SW¼	155.00			X			X				X	X				
Sec.7	155.05			X			X				X	X				
Sec.15	160			X			X				X	X				
Sec.21	160			X			X				X	X				
Sec.22	320			X			X				X	X				
Sec.25	40		X			X					X	X				
Sec.29	160			X			X				X	X				
T8S R45W																
Sec.9	160			X			X				X	X				
Sec.11	240			X			X				X	X				
Sec.12	80			X			X				X	X				
T9S R45W																
Sec.6	319.88			X			X				X	X				
T10S R45W																
Sec.25	320			X			X				X	X				
Sec.27	160			X			X				X	X				
Sec.32	320			X			X				X	X				
T11S R45W																
Sec.11	320			X			X				X	X				
Sec.28	320			X			X				X	X				
T13S R45W																
Sec.8	321.50			X			X				X	X				
T1S R46W																
Sec.27	37.75											X				
Sec.34	149.32	X			X						X	X				
T2S R46W																
Sec.1	40	X			X						X	X				
Sec.2	159.62	X			X						X	X				
Sec.3	479.90	X			X						X	X				
Sec.4	320.73	X			X						X	X				
Sec.5	40											X				
Sec.9	320	X			X						X	X				
Sec.10;SE¼NW¼, W½NW¼	120											X				
Sec.10;S½SE¼, SE¼SW¼	120	X			X						X	X				
Sec.11	160	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.12	120	X			X						X	X				
Sec.29	40	X			X						X	X				
Sec.35	160	X			X						X	X				
T3S R46W																
Sec.4	79.51	X			X						X	X				
Sec.5;S½NW¼	80											X				
Sec.5;SW¼	160	X			X						X	X				
Sec.6	360.65	X			X						X	X				
Sec.8	120	X			X						X	X				
Sec.17	320	X			X						X	X				
Sec.20	80	X			X						X	X				
Sec.21	200	X			X						X	X				
Sec.23	160	X			X						X	X				
Sec.24	40	X			X						X	X				
Sec.25	80	X			X						X	X				
Sec.29	80	X			X						X	X				
Sec.32	40	X			X						X	X				
Sec.34	80	X			X						X	X				
Sec.35	160		X			X					X	X				
T4S R46W																
Sec.2	79.97	X			X						X	X				
Sec.3	320.72	X			X						X	X				
Sec.5	40.4											X				
Sec.17	160			X			X				X	X				
T5S R46W																
Sec.14	159.30			X			X				X	X				
T6S R46W																
Sec.4	28.50	X			X						X	X				
Sec.7	34.55	X			X						X	X				
Sec.11	40	X			X						X	X				
Sec.12	40	X			X						X	X				
Sec.14	80	X			X						X	X				
Sec.23	40	X			X						X	X				
Sec.26;NW¼ SE¼NE¼	10		X				X				X			X		
Sec.26;NE¼SE¼, S½,SE¼NE¼,NE¼, SE¼NE¼	70	X			X						X	X				
Sec.27	40	X			X						X	X				
Sec.34	40	X			X						X	X				
Sec.35	120	X			X						X	X				
T7S R46W																
Sec.2	200.15	X			X						X	X				
T8S R46W																
Sec.8	320			X		X					X	X				
T9S R46W																
Sec.13	320			X			X				X	X				
T10S R46W																
Sec.11	160			X		X					X	X				
T16S R46W																
Sec.2	26.12											X				
Sec.30	80.59	X			X						X	X				
T1S R47W																
Sec.18	158.96	X			X						X	X				
Sec.20	160			X			X				X	X				
Sec.27	80	X			X						X	X				
Sec.34	80	X			X						X	X				
T2S R47W																
Sec.15	160	X			X						X	X				
Sec.21	40											X				
Sec.26	40											X				
Sec.27	40											X				
Sec.28	40	X			X						X	X				
Sec.29	40	X			X						X	X				
Sec.35	120	X			X						X	X				
T3S R47W																
Sec.7	77.67	X			X						X	X				
Sec.18	237.99	X			X						X	X				
Sec.19	80	X			X						X	X				
Sec.26	80	X			X						X	X				
Sec.27	80	X			X						X	X				
Sec.32	80	X			X						X	X				
Sec.33	160	X			X						X	X				
Sec.34	240	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T4S R47W																
Sec.4	240.96	X			X						X	X				
T5S R47W																
Sec.7	167.85			X			X				X	X				
Sec.22	160			X			X				X	X				
T5½S R47W																
Sec.32	20.68	X			X						X	X				
T6S R47W																
Sec.6;E½SE¼	81.04			X			X				X	X				
Sec.6;Lots 17 & 18	41.29	X			X						X	X				
Sec.18	54.64											X				
T9S R47W																
Sec.29	120	X			X						X	X				
T10S R47W																
Sec.14	160			X			X				X	X				
Sec.19	240.15			X			X				X	X				
T13S R47W																
Sec.2	322.61			X			X				X	X				
Sec.30	152.45			X			X				X	X				
T16S R47W																
Sec.14	160	X			X						X	X				
Sec.24	163.06	X			X						X	X				
T1S R48W																
Sec.17	80											X				
Sec.19	161.32	X			X						X	X				
Sec.28	40	X			X						X	X				
T2S R48W																
Sec.19	235.64	X			X						X	X				
Sec.20	400	X			X						X	X				
Sec.26	120	X			X						X	X				
Sec.33	80	X			X						X	X				
Sec.34	240	X			X						X	X				
T3S R48W																
Sec.1	40.22	X			X						X	X				
Sec.2	120.25	X			X						X	X				
Sec.8	80	X			X						X	X				
Sec.12	80	X			X						X	X				
Sec.33	80	X			X						X	X				
T4S R48W																
Sec.10	160	X			X						X	X				
Sec.13	80	X			X						X	X				
Sec.19	40		X			X					X	X				
Sec.20	40		X			X					X	X				
T5S R48W																
Sec.12	320			X			X				X	X				
T5½S R48W																
Sec.34	53.23	X					X				X	X				
Sec.35	43.03	X					X				X	X				
T6S R48W																
Sec.2	23.00	X					X				X	X				
Sec.11	160			X			X				X	X				
Sec.34	160			X			X				X	X				
T7S R48W																
Sec.24	40	X			X						X	X				
Sec.31	40	X			X						X	X				
Sec.33	480			X			X				X	X				
Sec.34	40			X			X				X	X				
T8S R48W																
Sec.4	320.70			X			X				X	X				
Sec.29	320			X			X				X	X				
T9S R48W																
Sec.22	160			X			X				X	X				
Sec.30	232.88			X			X				X	X				
T11S R48W																
Sec.7	160			X			X				X	X				
Sec.8	160			X			X				X	X				
T14S R48W																
Sec.2	79.53											X				
T16S R48W																
Sec.32	161.72	X			X						X	X				
T1S R49W																
Sec.5	80	X			X						X	X				
Sec.12	160	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	O	A	B	C	O	E
Sec.22	160			X			X				X	X				
Sec.30	160	X			X						X	X				
T2S R49W																
Sec.8	40	X			X						X	X				
Sec.13	160	X			X						X	X				
Sec.17;SE¼SW¼	40	X			X						X	X				
Sec.17;NW¼SW¼	40											X				
Sec.18	45.62	X			X						X	X				
Sec.19;N½NE¼	80	X			X						X	X				
Sec.19;NW¼,S½NE¼, N½SE¼	331.51			X			X				X	X				
Sec.20	80	X			X						X	X				
Sec.21	80	X			X						X	X				
Sec.27	80	X			X						X	X				
Sec.29	240	X			X						X	X				
Sec.30;NE¼NW¼	40											X				
Sec.30;S½SW¼,SW¼SE¼, S½NE¼,N½SE¼	285.71	X			X						X	X				
Sec.31	85.67	X			X						X	X				
Sec.32	120	X			X						X	X				
Sec.34	160	X			X						X	X				
T3S R49W																
Sec.7	170.00	X			X						X	X				
Sec.8	120	X			X						X	X				
Sec.19	84.90	X			X						X	X				
Sec.21	320	X			X						X	X				
Sec.22	320	X			X						X	X				
Sec.26	320	X			X						X	X				
Sec.30	40	X			X						X	X				
Sec.31	40	X			X						X	X				
Sec.33	80	X			X						X	X				
T4S R49W																
Sec.32	80		X			X					X	X				
T5S R49W																
Sec.3	160			X			X				X	X				
Sec.5	161.64			X			X				X	X				
Sec.6	160.60			X			X				X	X				
T5½S R49W																
Sec.31	39.19											X				
Sec.34	21.57	X					X				X	X				
Sec.35	21.28	X					X				X	X				
T6S R49W																
Sec.11	320			X			X				X	X				
T8S R49W																
Sec.14	320			X			X				X	X				
Sec.26	160			X			X				X	X				
T9S R49W																
Sec.4	160			X			X				X	X				
Sec.25	320			X			X				X	X				
Sec.35	160			X			X				X	X				
T10S R49W																
Sec.2	319.83			X			X				X	X				
Sec.6	160			X			X				X	X				
Sec.17	320			X			X				X	X				
Sec.20	160			X			X				X	X				
Sec.24	320			X			X				X	X				
T16S R49W																
Sec.34	320		X			X					X	X				
T1S R50W																
Sec.21	160			X			X				X	X				
T2S R50W																
Sec.13;W½	320			X			X				X	X				
Sec.13;W½W½, E½SE¼	240	X			X						X	X				
Sec.24	160	X			X						X	X				
Sec.25	40											X				
T3S R50W																
Sec.9	480			X			X				X	X				
Sec.20	160			X			X				X	X				
T6S R50W																
Sec.2	160			X			X				X	X				
Sec.3	160			X			X				X	X				
T7S R50W																
Sec.2	642.00			X			X				X	X				
T8S R50W																
Sec.28	40	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	O	A	B	C	O	E
Sec.29	80	X			X						X	X				
T9S R50W																
Sec.5	160			X			X				X	X				
T11S R50W																
Sec.6	80											X				
T12S R50W																
Sec.18	317.97											X				
T16S R50W																
Sec.18	78.10		X			X					X	X				
T2S R51W																
Sec.15	160			X			X				X	X				
Sec.22	160			X			X				X	X				
Sec.30	160.65			X			X				X	X				
T4S R51W																
Sec.32	320			X			X				X	X				
T6S R51W																
Sec.6	49.28	X			X						X	X				
T7S R51W																
Sec.14	80			X			X				X	X				
Sec.23	160			X			X				X	X				
T8S R51W																
Sec.2	160			X			X				X	X				
Sec.11	160			X			X				X	X				
T9S R51W																
Sec.9	160			X			X				X	X				
T11S R51W																
Sec.2	99.34	X			X						X	X				
Sec.4	64.41	X			X						X	X				
Sec.6	121.46	X			X						X	X				
Sec.12	320			X			X				X	X				
Sec.18	333.44			X			X				X	X				
T13S R51W																
Sec.10	78.19	X			X						X	X				
T16S R51W																
Sec.4	202.45	X			X						X	X				
Sec.8	160	X			X						X	X				
Sec.10	159.12	X			X						X	X				
T5S R52W																
Sec.3	480.62			X			X				X	X				
Sec.9	640			X			X				X	X				
Sec.10	640			X			X				X	X				
T6S R52W																
Sec.1	48.00											X				
T8S R52W																
Sec.1	320			X			X				X	X				
T10S R52W																
Sec.8	320			X			X				X	X				
T11S R52W																
Sec.4	121.56	X					X				X	X				
Sec.6	190.24	X					X				X	X				
T13S R52W																
Sec.10	40											X				
T16S R52W																
Sec.12	40		X			X					X	X				
T17S R52W																
Sec.31	154.69	X			X						X	X				
T1S R53W																
Sec.8	40											X				
T2S R53W																
Sec.26	160			X			X				X	X				
T3S R53W																
Sec.31	40											X				
T4S R53W																
Sec.7	40											X				
Sec.21	160			X			X				X	X				
Sec.28	80			X			X				X	X				
T7S R53W																
Sec.12	320			X		X					X	X				
T13S R53W																
Sec.14	320			X			X				X	X				
T16S R53W																
Sec.2	40	X			X						X	X				
Sec.4	73.00	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.6	88.63	X			X						X	X				
T17S R53W																
Sec.22	80	X			X						X	X				
Sec.27	40	X			X						X	X				
Sec.31	153.93	X			X						X	X				
Sec.32	80	X			X						X	X				
Sec.34	40	X			X						X	X				
T1S R54W																
Sec.21	320			X			X				X	X				
T3S R54W																
Sec.11	320			X			X				X	X				
T6S R54W																
Sec.21	160			X			X				X	X				
T9S R54W																
Sec.17	240			X	X						X	X				
T11S R54W																
Sec.8	320	X			X						X	X				
Sec.34	320	X			X						X	X				
T14S R54W																
Sec.34	640			X			X				X	X				
T15S R54W																
Sec.6	312.81			X			X				X	X				
T16S R54W																
Sec.25	320	X			X						X	X				
Sec.26	160											X				
Sec.35	120											X				
T17S R54W																
Sec.2	120	X			X						X	X				
Sec.9	80	X			X						X	X				
Sec.13	160	X			X						X	X				
Sec.18	42.95											X				
Sec.22	160											X				
Sec.24	40	X			X						X	X				
Sec.31	164.89	X			X						X	X				
Sec.34	160	X			X						X	X				
Sec.35	80	X			X						X	X				
T3S R55W																
Sec.28	80	X			X						X	X				
Sec.29	80	X			X						X	X				
Sec.34	80	X			X						X	X				
T4S R55W																
Sec.18	80.63											X				
Sec.19	40.27											X				
Sec.26	80											X				
T5S R55W																
Sec.26	40											X				
Sec.27	160	X			X						X	X				
T6S R55W																
Sec.8	240			X			X				X	X				
Sec.9	80			X			X				X	X				
Sec.22	320			X			X				X	X				
T16S R55W																
Sec.10	80											X				
Sec.12	112.79	X			X						X	X				
Sec.26	40											X				
Sec.30	33.77											X				
Sec.31	110.92											X				
T17S R55W																
Sec.23;NE¼	160											X				
Sec.23;E½SE¼	80	X			X						X	X				
Sec.24	160	X			X						X	X				
Sec.26	160	X			X						X	X				
Sec.28	560	X			X						X	X				
Sec.33	366.67	X			X						X	X				
T3S R56W																
Sec.10	80	X			X						X	X				
Sec.22	80	X			X						X	X				
Sec.28	80	X			X						X	X				
T4S R56W																
Sec.13	40											X				
T6S R56W																
Sec.14	40	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T7S R56W																
Sec.8	160	X			X						X	X				
T8S R56W																
Sec.18	40.28											X				
T13S R 56W																
Sec.12	120	X			X						X	X				
Sec.28	160			X			X				X	X				
Sec.29	80			X			X				X	X				
Sec.31	40	X			X						X	X				
T15S R56W																
Sec.22	160	X			X						X	X				
T16S R56W																
Sec.3	80											X				
Sec.7	40											X				
Sec.11	80	X			X						X	X				
Sec.17	280	X			X						X	X				
Sec.18	167.84	X			X						X	X				
Sec.19	82.35	X			X						X	X				
Sec.20	40	X			X						X	X				
Sec.21	40	X			X						X	X				
Sec.24	240	X			X						X	X				
Sec.25;N½NW¼	80	X			X						X	X				
Sec.25;SE¼SE¼	40											X				
Sec.26	280	X			X						X	X				
Sec.28	40	X			X						X	X				
Sec.29	80	X			X						X	X				
Sec.30	42.17	X			X						X	X				
Sec.33	40	X			X						X	X				
Sec.34	240	X			X						X	X				
T17S R56W																
Sec.1	40	X			X						X	X				
Sec.2	200.97	X			X						X	X				
Sec.10	160	X			X						X	X				
Sec.11	200	X			X						X	X				
Sec.12	280	X			X						X	X				
Sec.14	320	X			X						X	X				
Sec.22	320	X			X						X	X				
Sec.26	320	X			X						X	X				
Sec.33	80	X			X						X	X				
T1S R57W																
Sec.22	160			X			X				X	X				
Sec.27	160			X			X				X	X				
T2S R57W																
Sec.21	80	X			X						X	X				
Sec.27	40	X			X						X	X				
Sec.28	40	X			X						X	X				
Sec.29	40	X			X						X	X				
T5S R57W																
Sec.18	157.00	X			X						X	X				
T6S R57W																
Sec.2	143.28	X			X						X	X				
Sec.4	151.15	X			X						X	X				
Sec.6	321.98	X			X						X	X				
Sec.10	320	X			X						X	X				
Sec.18	40	X			X						X	X				
Sec.20	320	X			X						X	X				
Sec.24	40											X				
Sec.26	160	X			X						X	X				
T7S R57W																
Sec.4	320	X			X						X	X				
Sec.10	320	X			X						X	X				
Sec.20	160		X			X					X		9			
Sec.22	320		X			X					X		9			
Sec.32	40	X			X						X	X				
T8S R57W																
Sec.2	200.28										X					
Sec.6	53.14	X			X						X	X				
T9S R57W																
Sec.20	40	X			X						X	X				
T12S R57W																
Sec. 6	268.56			X			X				X	X				
T13S R57W																
Sec.17	80			X			X				X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.18	240			X			X				X	X				
Sec.27	40											X				
T14S R57W																
Sec.13	40	X			X						X	X				
Sec.14	40	X			X						X	X				
Sec.15	80	X			X						X	X				
Sec.17	40	X			X						X	X				
T15S R57W																
Sec.3	80.67	X			X						X	X				
Sec.4	40	X			X						X	X				
Sec.5	319.56			X			X				X	X				
Sec.15	480			X			X				X	X				
Sec.18	49.63	X			X						X	X				
Sec.28	80	X			X						X	X				
Sec.29	40	X			X						X	X				
Sec.32	40	X			X						X	X				
T16S R57W																
Sec.1	8.52											X				
Sec.3	8.08	X			X						X	X				
Sec.7	55.22											X				
Sec.13	80	X			X						X	X				
Sec.17	40											X				
Sec.19	17.49											X				
Sec.20	80	X			X						X	X				
Sec.21	120											X				
Sec.22;SW¼SW¼	40											X				
Sec.22;NW¼NE¼	40	X			X						X	X				
Sec.23	120	X			X						X	X				
Sec.24	240	X			X						X	X				
Sec.27;N½NW¼, SE¼NW¼	120											X				
Sec.27;NW¼SW¼	40	X			X						X	X				
Sec.28	40	X			X						X	X				
T17S R57W																
Sec.7	80	X			X						X	X				
Sec.18	24.80											X				
Sec.20	40	X			X						X	X				
Sec.21	40											X				
Sec.25	80											X				
Sec.29	320	X			X						X	X				
Sec.30	80	X			X						X	X				
Sec.31	320	X			X						X	X				
Sec.32	560	X			X						X	X				
T3S R58W																
Sec.26	160	X			X						X	X				
T5S R58W																
Sec.14	320			X			X				X	X				
T6S R58W																
Sec.2	109.32	X			X						X	X				
Sec.14	120	X			X						X	X				
T12S R58W																
Sec.10	320			X			X				X	X				
Sec.32	40											X				
T13S R58W																
Sec.19	195.74	X			X						X	X				
Sec.26	40											X				
Sec.33	80	X			X						X	X				
T14S R58W																
Sec.2	120											X				
Sec.3	40											X				
Sec.11	40											X				
Sec.12	40											X				
Sec.21	80	X			X						X	X				
Sec.22	320			X			X				X	X				
Sec.27	80			X							X	X				
T15S R58W																
Sec.12	120	X			X						X	X				
Sec.13	120	X			X						X	X				
Sec.34	120	X			X						X	X				
T16S R58W																
Sec.2	40	X			X						X	X				
Sec.3	48.50											X				
Sec.6	239.80			X			X				X	X				
Sec.17	40	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T17S R58W																
Sec.18	40											X				
Sec.28	40	X			X						X	X				
Sec.33	160	X			X						X	X				
T1S R59W																
Sec.10	40	X			X						X	X				
Sec.11	80	X			X						X	X				
T3S R59W																
Sec.24	160	X			X						X	X				
T13S R59W																
Sec.12	40										X					
Sec.13	40										X					
T15S R59W																
Sec.28	80											X				
T16S R59W																
Sec.1;Lots 1 thru 4	34.26	X			X						X	X				
Sec.1;S½SE¼	80			X			X				X	X				
Sec.6	39.29	X			X						X	X				
Sec.7	40	X			X						X	X				
Sec.11	40	X			X						X	X				
Sec.12	40	X			X						X	X				
Sec.35	80	X			X						X	X				
T17S R59W																
Sec.6	40											X				
Sec.25	280	X			X						X	X				
T1S R60W																
Sec.6;N½NE¼, SE¼NE¼	130.00								X							
Sec.6;E½W½	164.85									0						
Sec.6;SW¼NE¼, W½W½, SE¼	363.56							X								
T3S R60W																
Sec.10	480			X			X		X			X				
T14S R60W																
Sec.11	160										X					
Sec.21	320			X			X				X	X				
Sec.22	320			X			X				X	X				
Sec.35	160										X					
T16S R60W																
Sec.9	80	X			X						X	X				
T1S R61W																
Sec.2;E½SE¼	80							X								
Sec.2;Remainder	582.86								X							
Sec.4	327.08								X							
Sec.10	160								X							
Sec.12;NW¼	160							X								
Sec.12;W½SW¼,E½SE¼, NW¼SW¼, SW¼SE¼	240	X			X			X				X				
Sec.12;NW¼SE¼, SE¼SW¼	80	X			X					0		X				
Sec.14;NE¼NE¼	40							X								
Sec.14; S½NE¼	80									0						
Sec.14;NW¼NE¼, W½	360								X							
Sec.18	309.04			X			X		X			X				
Sec.22	80								X							
T2S R61W																
Sec.34	160			X			X		X			X				
T16S R61W																
Sec.33	160	X			X						X	X				
T17S R61W																
Sec.8	320	X			X						X	X				
Sec.20	480	X			X						X	X				
Sec.29	400	X			X						X	X				
T16S R62W																
Sec.21	320	X			X						X	X				
Sec.24	80											X				
Sec.25	240	X			X						X	X				
Sec.27	320	X			X						X	X				
Sec.31	40	X			X						X	X				
Sec.32	40	X			X						X	X				
Sec.35	160	X			X						X	X				
T17S R62W																
Sec.1	40	X			X						X	X				
Sec.2	120.29	X			X						X	X				
Sec.6	80	X			X						X	X				
Sec.7	320	X			X						X	X				
Sec.8	80	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 2

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.13	80	X			X						X	X				
Sec.18	160	X			X						X	X				
Sec.20	160	X			X						X	X				
Sec.32	160	X			X						X	X				
T16S R63W																
Sec.32	320	X			X						X	X				
Sec.24	320	X			X						X	X				
Sec.25	80	X			X						X	X				
T17S R63W																
Sec.2	[illegible].46	X			X						X	X				
Sec.3	160.52	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 3

6,697.13 acres

18. Locatable Minerals

	High	Moderate	Low
		Potential	
Available	0	0	1,290.66
Concern Area	0	0	2,997.11
Closed	0	0	1,155.62

19. Salable Minerals

	High	Moderate	Low
		Potential	
Open	205	29	1,206.25
Concern Area	80	160	530.41
Closed	690	475.62	2,104.08

20. Coal

	High	Moderate	Low
		Potential	
Suitable	0	0	0
Open	0	0	0
Unsuitable	0	0	0
None	0	0	5,456.97

21. Oil and Gas

	High	Moderate	Low
		Potential	
Standard	1,959.86	260	0
Seasonal	1,308.16	340	0
Yearlong	2,399.2	180	0
Open	250	0	0
Unsuitable	0	0	0

MANAGEMENT ZONE 3

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T11N R44W																
Sec.6;SE¼SE¼, S½ NE¼SE¼, S½ SW¼SE¼	80		X				X				X			X		
Sec.6;N½ NE¼SE¼, N½ SW¼SE¼	40		X			X					X		5			
Sec.6,W½ NW¼NW¼	13.58										X	X				
T12N R44W																
Sec.33;NW¼SE¼, N½ NE¼SE¼, W½ SE¼SE¼	80			X			X				X			X		
Sec.33,SE¼SE¼, S½ NE¼SE¼, E½ SW¼SE¼	80			X			X				X		5			
T11N R47W																
Sec.32	40		X				X				X			X		
T11N R48W																
Sec.24	160		X				X				X			X		
T8N R51W																
Sec.7;North of HWY	20	X			X						X	X				
Sec.B;North of HWY	40	X			X						X	X				
T9N R51W																
Sec.11;NE¼SE¼	40													X		
Sec.11;SE¼SW¼	40												5			
Sec.12;NE¼ NW¼NW¼ S½ NW¼NW¼	30													X		
Sec.12;NW¼ NW¼NW¼	10												5			
Sec.14;NW¼ NW¼NW¼, NW¼NW¼	30		X				X				X			X		
Sec.14;NE¼ NW¼NW¼	10		X			X					X		5			
Sec.15	40		X			X					X		5			
Sec.20;S½ SE¼SW¼, NE¼ SE¼SW¼, N½ SW¼SW¼	50														X	
Sec.20;NW¼ SE¼SW¼, S½ SW¼SW¼	30												5			

LOCATABLE SALABLE COAL . OIL AND GAS

MANAGEMENT ZONE 3

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.20;N½ NW¼SE¼	20		X			X					X		5			
Sec.20;S½ NW¼SE¼	20		X			X					X			X		
Sec.21;S½ NE¼NE¼, SE¼ NW¼NE¼	30		X				X				X			X		
Sec.21;N½ NW¼NE¼, SW¼ NW¼NE¼, N½ NE¼NE¼	50		X			X					X		5			
Sec.26 North of HWY	100	X			X						X	X				
Sec.34;North of HWY	20	X			X						X	X				
T9N R52W																
Sec.25	40		X				X				X			X		
T5N R53W																
Sec.5;North of HWY	140.82		X			X					X		5/7			
Sec.6;SE¼ SE¼NE¼	10		X			X					X		5			
Sec.6;SW¼SE¼NE¼, N½SE¼NE¼, N½NE¼, SW¼NE¼	150.66		X				X				X			X		
Sec.7;Onshore	59.59		X			X					X		5			
Sec.7;Offshore	19.88		X				X				X			X		
T6N R53W																
Sec.4;SE¼ SW¼SW¼	10		X			X					X		5			
Sec.4;SE¼NW¼, N½SW¼, N½SW¼SW¼, SW¼SW¼SW¼	125	X			X						X	X				
Sec.30	160			X			X				X	X				
Sec.33;North of HWY	20	X			X						X	X				
T9N R53W																
Sec.2;W½ NW¼NW¼	20.12													X		
Sec.2;E½ NW¼NW¼	20.13												10			
Sec.15;N½ NW¼NW¼, SW¼NW¼NW¼	30		X				X				X			X		
Sec.15;SE¼ NW¼NW¼	10	X			X						X	X				
T5N R54W																
Sec.12;Offshore	100		X				X				X			X		
Sec.12;Onshore	140		X				X				X		5			
Sec.14;Offshore	95		X				X				X			X		
Sec.14;Onshore	225		X				X				X		5			
Sec.28;North of HWY	19	X			X						X	X				
T4N R55W																
Sec.5;NW¼ SE¼NE¼	10		X			X					X		5			
Sec.5;NE¼ SE¼NE¼, S½ SE¼NE¼	30		X				X				X			X		
Sec.7	40		X				X				X			X		
T4N R56W																
Sec.30	80													X		
T4N R58W																
Sec.17;NE¼NW¼SW¼, NE¼SE¼SW¼	60												5			
Sec.17;SW¼SW¼,S½ SE¼SW¼, NW¼SE¼SW¼, S½NW¼SE¼, NW¼NW¼SW¼	100													X		
Sec.18;NE¼SE¼	40														X	
Sec.18;E½NE¼, NW¼NE¼, NE¼NW¼	160		X			X					X				X	
Sec.21;N½ SW¼SW¼, SE¼SE¼SE¼, SE¼SW¼	70													X		
Sec.21;SW¼SW¼SW¼	10												5			
Sec.28,NE¼NE¼NW¼, N½NW¼NE¼, SE¼NW¼NE¼, NW¼NE¼NE¼, S½NE¼NE¼	70													X		
Sec.28;NW¼NW¼,W½ NE¼NW¼, SE¼NE¼NW¼, SW¼NW¼NE¼, NE¼NE¼NE¼	90												5			
T3N R59W																
Sec.3	40		X				X				X			X		
T4N R59W																
Sec.7	155.62			X			X				X	X				
Sec.11;S½S½ SE¼NW¼	10		X			X					X		5			
Sec.11;N½S½ SE¼NW¼, N½ SE¼NW¼	30		X				X				X			X		
Sec.18	80			X			X				X	X				
Sec.19	80			X			X				X	X				
Sec.20	40											X				
Sec.34;NE¼ NW¼NE¼	10		X				X				X			X		
Sec.34;NW¼NW¼NE¼, S½NW¼NE¼	30		X			X					X		5			
T4N R60W																
Sec.1	40											X				
Sec.2;N½SW¼NW¼, N½S½ SW¼NW¼, S½SW¼ SW¼NW¼	35		X				X				X			X		
Sec.2;S½SE¼ SW¼NW¼	5		X			X					X		5			
Sec.3;N½SE¼NE¼, N½S½ SE¼NE¼, SW¼SE¼NE¼	35		X				X				X			X		
Sec.3;S½SE¼SE¼NE¼	5		X			X					X		5			
Sec.23	40											X				
Sec.30;Offshore	67.26		X				X				X			X		

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 3

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	0	E
Sec.30,W½ SW¼SE¼, NE¼SE¼SE¼,Onshore	30		X			X					X		5			
Sec.30;E½SW¼SE¼, SE¼SE¼	50	X			X						X	X				
Sec.31,Offshore	135		X				X				X			X		
Sec.31,Onshore	25		X			X					X		5			
T5N R60W																
Sec.14;S½NW¼	80			X			X				X			X		
Sec.15;SE¼NE¼	40			X			X				X			X		
Sec.21	160			X			X				X			X		
Sec.22;SW¼SW¼	40			X			X				X			X		
Sec.23;SE¼NE¼ SW¼	10			X			X				X			X		
Sec.27;SW¼NE¼	40			X			X				X			X		
T3N R61W																
Sec.1;Offshore	21.28		X				X				X			X		
Sec.1;Onshore	20.00		X			X					X		5			
Sec.2;Offshore	50		X				X				X			X		
Sec.2;Onshore	32.62		X			X					X		5			
T4N R61W																
Sec.3	160	X			X						X	X				
Sec.4	326.66	X			X						X	X				
Sec.5;W½ NE¼SE¼, E½E½ NE¼SE¼,W½SE¼ NE¼SE¼,N½ SE¼SE¼	55		X				X				X			X		
Sec.5;W½NE¼ NE¼SE¼, S½SE¼SE¼	25		X			X					X		5			
Sec.10	240	X			X						X	X				
Sec.22	40													X		
Sec.25;Offshore	115		X				X				X			X		
Sec.25,Onshore	5		X			X					X		5			
Sec.26;Offshore	30		X				X				X			X		
Sec.26;Onshore	10		X			X					X		5			
Sec.35;Offshore	100		X				X				X			X		
Sec.35;Onshore	5		X			X					X		5			
T5N R61W																
Sec.30;Offshore	60		X				X				X			X		
Sec.30;Onshore	20		X			X					X		6			
Sec.33	160	X			X						X	X				
T4N R62W																
Sec.14;S½NW¼	80											X				
Sec.14;S½NE¼	80												6			
Sec.15;NW¼ NW¼SW¼, S½ NW¼SW¼	30													X		
Sec.15;NE¼ NW¼SW¼	10												5			
T7N R67W																
Sec.2	160											X				
T9N R68W																
Sec.20	80			X			X				X	X				
T9N R69W																
Sec.26	240			X			X				X		7			

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 4

40,031.75 acres

18. Locatable Minerals

	Potential		
	High	Moderate	Low
Available	0	1,000	10,892.62
Concern Area	955.8	80	2,979.92
Closed	0	11,748.81	8,693.94

19. Salable Minerals

	Potential		
	High	Moderate	Low
Open	0	5,966.88	6,185.74
Concern Area	0	4,015.72	0
Closed	480	7,504.95	12,237.80

20. Coal

	Potential			
	High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	6,740.63	12,251.3	0
Unsuitable	0	0	0	0
None	0	0	0	17,029.27

21. Oil and Gas

	Potential		
	High	Moderate	Low
Standard	17,331.81	17,191.7	0
Seasonal	1,735.65	3,301.89	0
Yearlong	0	0	0
Open	0	160	0
Unsuitable	0	0	0

MANAGEMENT ZONE 4

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	0	A	B	C	0	E
T12N R46W																
Sec.26	31.20											X				
T9N R51W																
Sec.5	122.55			X			X				X	X				
T12N R51W																
Sec.22	69.52			X			X				X	X				
Sec.24	160			X			X				X	X				
T11N R53W																
Sec.17	40												9			
Sec.27	120												9			
T10N R54W																
Sec.14	40											X				
T11N R54W																
Sec.12	320												9			
Sec.18	201.67											X				
T6N R55W																
Sec.27	320			X			X				X	X				
T9N R55W																
Sec.5	320			X			X				X	X				
Sec.8	320			X			X				X	X				
T10N R55W																
Sec.11	40											X				
Sec.15	40											X				
T11N R55W																
Sec.4	40											X				
Sec.7	320	X			X							X				
Sec.8	280	X			X						X	X				
Sec.9	120	X			X						X	X				
Sec.10	240	X			X						X	X				
Sec.13	80											X				
Sec.20;E½NE¼	80	X			X						X	X				
Sec.20;SW¼SW¼	40										X		9			
T12N R55W																
Sec.28	320	X			X						X	X				
T5N R56W																
Sec.19;SE¼SW¼	40	X			X						X	X				
Sec.19;E½SE¼, SE¼NE¼	120			X			X				X	X				
Sec.20	200			X			X				X	X				
Sec.21	160			X			X				X	X				
Sec.30	160			X			X				X	X				
T8N R56W																
Sec.6	60.08	X			X						X	X				
Sec.7	40	X			X						X	X				
Sec.8	80											X				
Sec.14	160			X			X				X	X				
Sec.17	40	X			X						X	X				
T9N R56W																
Sec.21	40											X				
Sec.24	160			X			X				X	X				
T10N R56W																
Sec.9	40											X				
Sec.15	120	X			X						X	X				
T11N R56W																
Sec.1	80	X			X						X	X				
Sec.10	40	X			X						X	X				
Sec.12	80	X			X						X	X				
Sec.17	80	X			X						X	X				
Sec.19	120	X			X						X	X				
Sec.24	320		X			X					X		10			
T4N R57W																
Sec.10;SE¼	160			X			X				X	X				
Sec.10;NE¼SW¼	40											X				
Sec.15	80			X			X				X	X				
Sec.17	80			X			X				X	X				
Sec.19	160			X			X				X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 4

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T5N R57W																
Sec.7	40	X			X						X	X				
Sec.8	360	X			X						X	X				
Sec.9	280	X			X						X	X				
Sec.17	80	X			X						X	X				
Sec.18	40	X			X						X	X				
Sec.19	40											X				
Sec.20	40											X				
Sec.34	160											X				
T6N R57W																
Sec.30	320			X			X				X	X				
Sec.31	35.85	X			X						X	X				
T7N R57W																
Sec.26	40										X	X				
Sec.34	320			X			X				X	X				
T8N R57W																
Sec.1	40	X			X						X	X				
Sec.33	160			X			X				X	X				
T9N R57W																
Sec.28	80	X			X						X	X				
Sec.33	80	X			X						X	X				
T10N R57W																
Sec.6	80.72		X			X					X		9			
Sec.9	80	X			X						X	X				
Sec.10	40	X			X						X	X				
Sec.15	80	X			X						X	X				
T11N R57W																
Sec.13	40	X			X						X	X				
Sec.19	80	X			X						X	X				
Sec.23	80	X			X						X	X				
Sec.24;SE¼SW¼, N½SE¼	120		X			X					X		9			
Sec.24;NW¼NW¼, S½NW¼, N½SW¼, SW¼SW¼	240	X			X						X	X				
Sec.25	40		X			X					X		9			
Sec.26	120	X			X						X	X				
Sec.27	120	X			X						X	X				
Sec.28	40	X			X						X	X				
Sec.30	230.73		X			X					X		9			
Sec.31	184.20		X			X					X		9			
Sec.33	160	X			X						X	X				
T4N R58W																
Sec.6	142.22											X				
T5N R58W																
Sec.5	80	X			X						X	X				
Sec.9	80	X			X						X	X				
Sec.13	40											X				
Sec.14	320			X			X				X	X				
Sec.15	160			X			X				X	X				
T6N R58W																
Sec.7	40	X			X						X	X				
Sec.18	42.85	X			X						X	X				
Sec.19:NW¼	165.96	X			X						X	X				
Sec.19;N½SW¼	83.10											X				
Sec.21	80	X			X						X	X				
Sec.27	40	X			X						X	X				
Sec.29	120	X			X						X	X				
Sec.32	160	X			X						X	X				
T7N R58W																
Sec.2	39.00			X			X				X	X				
Sec.24	320			X			X				X	X				
T8N R58W																
Sec.7	156.81			X			X				X	X				
Sec.15	40	X			X						X	X				
Sec.17	120			X			X				X	X				
Sec.20	320			X			X				X	X				
Sec.21	280			X			X				X	X				
Sec.24	80											X				
Sec.35	160			X			X				X	X				
T9N R58W																
Sec.33	80	X			X						X	X				
T10N R58W																
Sec.4	40	X			X						X	X				
Sec.12	320	X			X						X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 4

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.13	320	X			X						X	X				
Sec.23	120	X			X						X	X				
Sec.35	320			X			X				X	X				
T11N R58W																
Sec.25	80		X			X					X		9			
Sec.26	320			X			X				X	X				
Sec.31;NE¼	160			X			X		X			X				
Sec.31;SE¼	160			X			X		X				9			
Sec.34	160			X			X				X	X				
T6N R59W																
Sec.3	81.00	X			X						X	X				
Sec.11	80	X			X						X	X				
Sec.13	200	X			X						X	X				
Sec.14	240	X			X						X	X				
Sec.24	200	X			X						X	X				
Sec.25	400	X			X						X	X				
T8N R59W																
Sec.31	340			X			X		X			X				
T9N R59W																
Sec.11	320			X			X		X			X				
Sec.21	240			X			X		X			X				
Sec.24	320			X			X				X	X				
Sec.31	160.06			X			X		X			X				
T10N R59W																
Sec.4	151.08	X			X				X			X				
Sec.6	145.36		X			X			X				9			
Sec.10	80	X			X				X			X				
Sec.23	80	X			X				X			X				
Sec.24	120	X			X				X			X				
Sec.25	320	X			X				X			X				
T11N R59W																
Sec.2	322.00			X			X		X			X				
Sec.15	160			X			X		X						X	
T12N R59W																
Sec.30	660.87			X			X		X			X				
Sec.35	320			X			X		X			X				
T5N R60W																
Sec.12	40											X				
T6N R60W																
Sec.1	320			X			X				X	X				
T7N R60W																
Sec.10	320			X			X		X			X				
T8N R60W																
Sec.35	320			X			X		X			X				
T9N R60W																
Sec.2	80		X			X			X				9			
Sec.4	40			X			X		X			X				
Sec.9	120			X			X		X			X				
Sec.21	320			X			X		X			X				
T10N R60W																
Sec.11	320			X			X		X			X				
T6N R61W																
Sec.20	40	X			X						X	X				
Sec.27	160											X				
Sec.29	120	X			X						X	X				
T7N R61W																
Sec.7	153.33			X			X		X			X				
T10N R61W																
Sec.29	120	X			X				X			X				
T11N R61W																
Sec.13	320			X			X		X			X				
Sec.18	40								X				9,			
T5N R62W																
Sec.18	160	X			X						X	X				
Sec.20	320	X			X						X	X				
Sec.27	320											X				
T6N R62W																
Sec.4	80	X			X				X			X				
T7N R62W																
Sec.2	320.44			X			X		X			X				
Sec.10	80			X			X		X			X				
T8N R62W																
Sec.26	320			X			X		X			X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 4

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.27	320											X				
T9N R62W																
Sec.5	399.28			X			X		X			X				
Sec.8	320			X			X		X			X				
Sec.17	480			X			X		X			X				
Sec.20	120			X			X		X			X				
Sec.27	40								X			X				
Sec.35	40											X				
T5N R63W																
Sec.12	160										X	X				
Sec.14	320	X			X						X	X				
Sec.22	640	X			X						X	X				
Sec.24	320	X			X						X	X				
T6N R63W																
Sec.20	160			X			X				X	X				
T7N R63W																
Sec.28	120											X				
T8N R63W																
Sec.20	160			X			X		X			X				
Sec.28	320			X			X		X			X				
Sec.31	632.80			X			X					X				
Sec.32	320			X			X		X			X				
Sec.33	320			X			X					X				
T9N R63W																
Sec.11	40			X			X		X			X				
Sec.12	200			X			X		X			X				
Sec.14	80			X			X		X			X				
T10N R63W																
Sec.4	160			X			X		X			X				
Sec.24	40	X			X				X			X				
T11N R63W																
Sec.31	160			X			X		X			X				
T7N R64W																
Sec.2	320.1								X			X				
Sec.14	160			X			X		X			X				
T8N R64W																
Sec.2	156.56			X			X		X			X				
Sec.20	480			X			X		X			X				
Sec.22	640			X			X		X			X				
Sec.28	160			X			X		X			X				
T9N R64W																
Sec.22	317.50			X			X		X			X				
T10N R64W																
Sec.17	160			X			X		X			X				
Sec.32	240			X			X		X			X				
T11N R64W																
Sec.4	159.74								X				9			
Sec.26	160			X			X		X			X				
T12N R64W																
Sec.14	22.08								X				9			
Sec.18	65.34		X			X			X				9			
Sec.20;S½S½	160		X			X			X				9			
Sec.20;N½NW¼, NE¼NE¼	120								X				9			
Sec.30	320.16		X			X			X				9			
T8N R65W																
Sec.24	160			X			X		X			X				
T9N R65W																
Sec.4	201.33			X			X		X			X				
Sec.6	156.56			X			X		X			X				
Sec.18	155.43			X			X		X			X				
T10N R65W																
Sec.22	160			X			X		X			X				
T11N R65W																
Sec.2	635.80		X			X			X				9			
Sec.6	313.41		X			X			X				9			
Sec.8	320		X			X			X				9			
Sec.12	320		X			X			X				9			
Sec.28	560			X			X		X			X				
Sec.30	40	X			X				X			X				
Sec.32	640	X			X				X			X				
T12N R65W																
Sec.14	80.00	X			X				X			X				
Sec.20	160	X			X				X			X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT
ZONE 4

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.22	640	X			X				X			X				
Sec.24	600		X			X			X				9			
Sec.30	155.80	X			X				X			X				
T9N R66W																
Sec.4	278.71			X			X		X			X				
T10N R66W																
Sec.2	80			X			X		X			X				
T12N R66W																
Sec.14	0.96								X			X				
Sec.28	160	X			X				X			X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 5

38,881.26 acres

18. Locatable Minerals		Potential	
	High	Moderate	Low
Available	0	1,890.94	0
Concern Area	713.17	30,996.05	1,738.25
Closed	0	0	0

19. Salable Minerals		Potential	
	High	Moderate	Low
Open	0	1,570.94	320
Concern Area	7,307.36	25,662.54	477.61
Closed	0	0	0

20. Coal		Potential		
	High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	0	0	0
Unsuitable	0	0	0	0
None	0	0	0	35,978.41

21. Oil and Gas		Potential	
	High	Moderate	Low
Standard	0	8,649.93	9,795.29
Seasonal	0	6,506.52	13,929.52
Yearlong	0	0	0
Open	0	0	0
Unsuitable	0	0	0

MANAGEMENT
ZONE 5

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T6N R69W																
Sec.17	40											X				
T9N R69W																
Sec.8	320		X			X					X	X				
Sec.18	320		X			X					X	X				
Sec.30	80											X				
T10N R69W																
Sec.4	321.28											X				
Sec.8	80											X				
Sec.18	160		X			X					X	X				
Sec.28	160										X	X				
Sec.30	578.32		X			X					X	X				
T11N R69W																
Sec.2	40											X				
Sec.4	157.61		X			X					X	X				
Sec.8	160		X			X					X	X				
Sec.10	160											X				
Sec.20	480		X			X					X	X				
Sec.22	320	X			X						X	X				
Sec.28	320		X			X					X	X				
Sec.30	160												1			
Sec.34	160		X			X					X	X				
T12N R69W																
Sec.20;SE¼, S½NE¼, E½SW¼, SE¼NW¼	360		X			X					X	X				
Sec.20;Lots 1,2,3	14.25											X				
Sec.22	319.95		X			X					X	X				
Sec.24	538.30		X			X					X	X				
Sec.26	320		X			X					X	X				
Sec.30	319.91		X			X					X		1			

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 5

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.32	320		X			X					X	X				
T2N R70W																
Sec.6	160.00		X			X					X	X				
T3N R70W																
Sec.3	87.05		X			X					X	X				
Sec.4	256.37		X			X					X	X				
Sec.5	136.80		X			X					X	X				
Sec.10	80		X			X					X	X				
Sec.11	[illegible]		X			X					X		9			
Sec.15	[illegible]		X			X					X	X				
Sec.31			X			X					X	X				
T4N R70W																
Sec.4	168.12		X			X					X		1			
Sec.5	271.49		X			X					X		1			
Sec.6	327.80		X			X					X		1			
Sec.7	507.20		X			X					X		1			
Sec.8	80		X			X					X		1			
Sec.9	120		X			X					X		1			
Sec.17	480		X			X					X		1			
Sec.18	80		X			X					X		1			
Sec.28	80		X			X					X		1			
Sec.32	80		X			X					X		1			
Sec.33	120		X			X					X		1			
Sec.34	40												1			
T5N R70W																
Sec.2	40		X			X					X		1			
Sec.17	120		X			X					X		4/1			
Sec.19	160		X			X					X		4/1			
Sec.20	40		X			X					X		4/1			
Sec.21	40		X			X					X		4/1			
Sec.26	80		X			X					X		1			
Sec.27	40		X			X					X		1			
Sec.30	120		X			X					X		4/1			
Sec.33	120		X			X					X		1			
Sec.34	40		X			X					X		1			
Sec.35	120		X			X					X		1			
T6N R70W																
Sec.2	40												1			
Sec.3;NW¼NW¼	40.20												1			
Sec.3;N½SE¼, SE¼SE¼	120		X			X					X		1			
Sec.4	80												1			
Sec.5;W½NW¼	79.43												1			
Sec.5;SW¼SW¼	40		X			X					X		1			
Sec.6	321.70		X			X					X		1			
Sec.9	40												1			
Sec.10	65.82		X			X					X		1			
Sec.11	286.71		X			X					X		1			
Sec.12;E½W½	160												1			
Sec.12;W½SW¼	80		X			X					X		1			
Sec.13	160		X			X					X		1			
Sec.14	160		X			X					X		1			
T7N R70W																
Sec.13	40		X			X					X	X				
Sec.24	40		X			X					X	X				
Sec.31	53.73		X			X					X		1			
T9N R70W																
Sec.4	77.00		X			X					X	X				
Sec.6	160		X			X					X	X				
T10N R70W																
Sec.2	314.72		X			X					X		1			
Sec.4	202.69											X				
Sec.6	481.75		X			X					X		1			
Sec.8	640		X			X					X	X				
Sec.10	320											X				
Sec.12	240												1			
Sec.14	640		X			X					X	X				
Sec.18	80.86		X			X					X	X				
Sec.22	120		X			X					X	X				
Sec.24	640		X			X					X	X				
Sec.26	80		X			X					X	X				
Sec.33	40		X			X					X	X				
Sec.34	40		X			X					X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 5

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T11N R70W																
Sec.2	321.96		X			X					X		1			
Sec.4	280.60		X			X					X		1			
Sec.6	487.76	X			X						X	X				
Sec.8;SW¼,SE¼NW¼	200	X			X						X	X				
Sec.8;NE¼NE¼, E½SE¼	120		X			X					X		1			
Sec.10	480		X			X					X		1			
Sec.12	160		X			X					X		1			
Sec.14;SW¼,W½NW¼, SE¼NW¼, SW¼NE¼	320		X			X					X		1			
Sec.14;Remainder	320												1			
Sec.18;	480.88	X			X						X	X				
Sec.20	160	X			X						X	X				
Sec.22	320		X			X					X		1			
Sec.24	160												1			
Sec.26	640		X			X					X		1			
Sec.28	160		X			X					X		1			
Sec.30	242.30	X			X						X	X				
Sec.34;NW¼,N½SW¼, SE¼SE¼,W½NE¼,W½SE¼, SE¼SE¼	480										X		1			
Sec.34;E½NE¼, NE¼SE¼	120												1			
T12N R70W																
Sec.22	320		X			X					X		1			
Sec.24	357.20		X			X					X		1			
Sec.26	640		X			X					X		1			
Sec.28	160		X			X					X		1			
Sec.34	40												1			
T2N R71W																
Sec.1	334.70		X			X					X	X				
T3N R71W																
Sec.2	40		X			X					X		2			
T4N R71W																
Sec.1	221.28		X			X					X		1			
Sec.2	283.98		X			X					X		1			
Sec.11	320		X			X					X		1			
Sec.12	360		X			X					X		1			
Sec.14	40		X			X					X		1			
Sec.25	40		X			X					X		1			
Sec.34	80		X			X					X		1			
T9N R71W																
Sec.3	160		X			X					X	X				
Sec.4	280.56		X			X					X	X				
Sec.5	401.49		X			X					X	X				
Sec.6	441.42		X			X					X	X				
Sec.7	240.59		X			X					X	X				
Sec.9	40		X			X					X	X				
Sec.15	40											X				
Sec.17	80		X			X					X	X				
Sec.18	80		X			X					X	X				
Sec.22	240		X			X					X	X				
Sec.23	40		X			X					X	X				
Sec.28	40		X			X					X	X				
Sec.29	40		X			X					X	X				
Sec.30	40		X			X					X	X				
T10N R71W																
Sec.2	641.90		X			X					X		1			
Sec.6;N½NE¼	80.81		X			X					X		1			
Sec.6;N½SW¼	81.14		X			X					X	X				
Sec.8	160		X			X					X	X				
Sec.10	320		X			X					X	X				
Sec.12	640		X			X					X	X				
Sec.14	480		X			X					X	X				
Sec.20	80		X			X					X		1			
Sec.22	80		X			X					X		1			
Sec.26	320		X			X					X	X				
Sec.27	360		X			X					X		1			
Sec.28	240		X			X					X		1			
Sec.29	640		X			X					X		1			
Sec.30	440		X			X					X		1			
Sec.31	480		X			X					X		1			
Sec.32	520		X			X					X		1			
Sec.33;NW¼NW¼, N½NE¼	120		X			X					X		1			
Sec.33;NW¼SW¼	40												1			
Sec.34;SW¼SW¼	40		X			X					X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 5

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.34;NE¼NW¼	40												1			
Sec.35	120		X			X					X	X				
T11N R71W																
Sec.2	200.58		X			X					X	X				
Sec.4	40.57		X			X					X		1			
Sec.4	5												1			
Sec.6;SE¼SW¼	40		X			X					X		1			
Sec.6;SW¼SW¼	40.82		X			X					X	X				
Sec.10	240		X			X					X	X				
Sec.18	482.50		X			X					X	X				
Sec.20	480		X			X					X		1			
Sec.24	240		X			X					X	X				
Sec.26	160		X			X					X		1			
Sec.28	320		X			X					X		1			
Sec.30	480		X			X					X		1			
Sec.32	160		X			X					X		1			
T12N R71W																
Sec.20	123.03		X			X					X		1			
Sec.22	160		X			X					X	X				
Sec.26	400		X			X					X	X				
Sec.28	40		X			X					X		1			
Sec.30	320.81		X			X					X		1			
Sec.34	440		X			X					X		1			
T10N R72W																
Sec.12	320		X			X					X	X				
T11N R72W																
Sec.12	240		X			X					X	X				
T12N R72W																
Sec.22	40		X			X					X		1			
Sec.24	40.32		X			X					X		1			
Sec.26	480		X			X					X		1			
T5N R73W																
Sec.26	80		X			X					X		1/3			

MANAGEMENT ZONE 6

9,238.81 acres

18. Locatable Minerals

	Potential High	Moderate	Low
Available	0	0	0
Concern Area	1,404.39	1,839.38	0
Closed	0	5,995.03	0

19. Salable Minerals

	Potential High	Moderate	Low
Open	0	0	0
Concern Area	3,243.78	0	0
Closed	1,840	2,835.03	400

20. Coal

	Potential High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	0	0	0
Unsuitable	0	0	0	0
None	0	0	0	9,238.81

21. Oil and Gas

	Potential High	Moderate	Low
Standard	0	220.68	1,866.56
Seasonal	0	80	1,076.54
Yearlong	0	0	1,840
Open	0	0	4,155.03
Unsuitable	0	0	0

MANAGEMENT ZONE 6

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
T1N R71W																
Sec.3	40		X			X					X		1			
Sec.4	340.01		X			X					X	X				
Sec.5	151.05		X			X					X	X				
Sec.6	133.88		X			X					X	X				
Sec.9	71.88		X			X					X	X				
Sec.11	120		X			X					X		1			

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 6

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
Sec.14	40		X			X					X		1			
Sec.15	120		X			X					X	X				
Sec.16	74.83		X			X					X	X				
Sec.17	11.78		X			X					X	X				
Sec.20	260.82		X			X					X	X				
Sec.21	283.39		X			X					X		2			
Sec.22	80		X			X					X		2			
Sec.27;E½SE¼, NE¼NE¼,NW¼NW¼	170.86		X			X					X		1/2			
Sec.27;SW¼NW¼	40		X			X					X		2			
Sec.33	40		X			X					X	X				
Sec.34	194.06		X			X					X		1/2			
T2N R71W																
Sec.26;W½SE¼	80		X			X					X		1			
Sec.26;SW¼	140.68		X			X					X	X				
Sec.35	80		X			X					X	X				
T1N R72W																
Sec.6	41.49		X			X					X	X				
Sec.11	318.66		X			X					X	X				
T1N R73W																
Sec.17	120			X			X				X				X	
Sec.18	241.68			X			X				X				X	
Sec.19	317.15			X			X				X				X	
Sec.23	150			X			X				X				X	
Sec.27	320			X			X				X				X	
Sec.29	80			X			X				X				X	
Sec.30	406.20			X			X				X				X	
Sec.34	80			X			X				X				X	
T1N R74W																
Sec.13	640			X			X				X				X	
Sec.14	120			X			X				X				X	
Sec.23	240			X			X				X				X	
Sec.24	480			X			X				X				X	
Sec.25	480			X			X				X				X	
Sec.26	480			X			X				X				X	
T1S R71W																
Sec.3;W½W½	145.88		X			X					X	X				
Sec.3;N½NE¼, SE¼NE¼	108.23		X			X					X		1/4			
Sec.8	85.89		X			X					X	X				
Sec.11	80			X			X				X			X		
Sec.13	640			X			X				X			X		
Sec.14	200			X			X				X			X		
Sec.17	30		X			X					X	X				
Sec.23	320			X			X				X				X	
Sec.24	600			X			X				X			X		
Sec.28	40.39		X			X					X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 7

5,781.99 acres

18. Locatable Minerals

	Potential High	Moderate	Low
Available	0	0	0
Concern Area	0	3,811.09	0
Closed	0	1,890.90	0

19. Salable Minerals

	Potential High	Moderate	Low
Open	0	0	0
Concern Area	3,811.09	0	0
Closed	1,890.9	0	0

20. Coal

	Potential High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	0	0	0
Unsuitable	0	0	0	0
None	0	0	0	5,701.99

21. Oil and Gas

	Potential High	Moderate	Low
Standard	0	0	1,014.41
Seasonal	0	0	1,280
Yearlong	0	0	0
Open	0	0	3,487.58
Unsuitable	0	0	0

MANAGEMENT ZONE 7

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T2S R71W																
Sec.3	440		X			X					X		1			
Sec.6	40		X			X					X	X				
Sec.7	45.94		X			X					X	X				
Sec.10	240		X			X					X		1			
Sec.12	80												1			
Sec.17;SE¼,N½SW¼,SE¼NE¼	280		X			X					X		1			
Sec.17;S½SW¼	80			X			X				X				X	
Sec.18	200		X			X					X	X				
Sec.19	200			X			X				X				X	
Sec.20;N½NW¼,NW¼NE¼	120			X			X				X				X	
Sec.20;NE¼NE¼,SE¼NW¼	80		X			X					X		1			
Sec.21	40		X			X					X		1			
Sec.22	40		X			X					X		1			
Sec.24	80		X			X					X		1			
Sec.31	333.86			X			X				X				X	
Sec.32	640		X			X					X				X	
T2S R72W																
Sec.13	240		X			X					X				X	
Sec.14	240		X			X					X				X	
Sec.18	570.07		X			X					X	X				
Sec.22	360			X			X				X				X	
Sec.23	80			X			X				X				X	
Sec.24	280			X			X				X				X	
Sec.25	80			X			X				X				X	
Sec.27	120			X			X				X				X	
Sec.33	80		X			X					X	X				
Sec.35	120			X			X				X				X	
T3S R72W																
Sec.2	200		X			X					X				X	
Sec.3;N½NE¼,SW¼NE¼	117.04			X			X				X				X	
Sec.3	276.68		X			X					X				X	
Sec.4	78.40		X			X					X	X				

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 8

10,623.6 acres

18. Locatable Minerals		Potential	
	High	Moderate	Low
Available	0	0	0
Concern Area	2,489.66	7,853.94	0
Closed	0	200	0

19. Salable Minerals		Potential	
	High	Moderate	Low
Open	0	0	0
Concern Area	10,049.66	0	0
Closed	280	0	0

20. Coal		Potential		
	High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	0	0	0
Unsuitable	0	0	0	0
None	0	0	0	10,623.6

21. Oil and Gas		Potential	
	High	Moderate	Low
Standard	0	0	0
Seasonal	0	0	1,973.14
Yearlong	0	0	0
Open	0	0	8,650.46
Unsuitable	0	0	0

MANAGEMENT ZONE 8

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T3S R71W																
Sec.7	80		X			X					X				X	
Sec.30	40		X			X					X				X	
Sec.31	80		X			X					X				X	
Sec.32	240		X			X					X				X	
Sec.34	200		X			X					X		4			
T4S R71W																
Sec.2; Lot3	45.37		X			X					X				X	

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 8

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.2;SW¼,SE¼NW¼	200			X			X				X				X	
Sec.4;E½SE¼	80			X			X				X		4			
Sec.4;SW¼,S½NW¼	240		X			X					X		4			
T2S R72W																
Sec.29	120		X			X					X				X	
Sec.31	412.42		X			X					X				X	
Sec.32	113.24		X			X					X				X	
T3S R72W																
Sec.2	236.64		X			X					X				X	
Sec.6	522.11		X			X					X				X	
Sec.7	48.23		X			X					X				X	
Sec.8	200		X			X					X				X	
Sec.9	320		X			X					X				X	
Sec.10	160		X			X					X				X	
Sec.11	360		X			X					X				X	
Sec.12	240		X			X					X				X	
Sec.13	120		X			X					X				X	
Sec.15	320		X			X					X				X	
Sec.17	118.74		X			X					X				X	
Sec.22	547.81		X			X					X				X	
Sec.23	200		X			X					X				X	
Sec.25	240		X			X					X				X	
Sec.26	160		X			X					X				X	
Sec.27	160		X			X					X		1			
Sec.28	240		X			X					X		1			
Sec.32	80		X			X					X		1			
Sec.33	40		X			X					X		1			
Sec.35	360		X			X					X		1			
T4S R72W																
Sec.1	400		X			X					X		1			
Sec.2	40		X			X					X				X	
Sec.3	40		X			X					X		1			
Sec.4;Lot 1	45.16		X			X					X		1			
Sec.4;Lots 2,3,6,SW¼	365.32		X			X					X				X	
Sec.5;Lots 1,2	87.98		X			X					X		1			
Sec.5;E½E½	160		X			X					X				X	
Sec.8;E½SE¼,NW¼SE¼,SE¼NE¼	240			X		X					X				X	
Sec.8;N½NE¼,E½NW¼	160		X			X					X				X	
Sec.9;SW¼,SW¼NW¼	200			X		X					X				X	
Sec.9;N½NW¼,NW¼NE¼,SE¼NE¼	160		X			X					X				X	
Sec.10	160		X			X					X				X	
Sec.11	40		X			X					X				X	
Sec.12	80		X			X					X				X	
Sec.13	120		X			X					X				X	
Sec.14	400		X			X					X				X	
Sec.15	200		X			X					X				X	
Sec.17	360			X		X					X				X	
Sec.18	40			X		X					X				X	
T2S R73W																
Sec.35	288.18		X			X					X				X	
Sec.36	322.80		X			X					X				X	
T3S R73W																
ALL	27.46		X			X					X				X	
T4S R73W																
ALL	0.63		X			X					X				X	
T3S R74W																
ALL	146.97		X			X					X				X	
T4S R74W																
ALL	14.5		X			X					X				X	

MANAGEMENT ZONE 9

25,840.64 acres

18. Locatable Minerals		Potential	
	High	Moderate	Low
Available	0	0	0
Concern Area	4,310.76	15,227.22	0
Closed	0	6,302.63*	0

19. Salable Minerals		Potential	
	High	Moderate	Low
Open	0	0	0
Concern Area	20,085.91	5,754.7	0
Closed	0	0	0

20. Coal

	Potential High	Moderate	Low	None
Suitable	0	0	0	0
Open	0	0	0	0
Unsuitable	0	0	0	0
None	0	0	0	25,840.61

21. Oil and Gas

	Potential High	Moderate	Low
Standard	0	0	4,335.66
Seasonal	0	0	7,177.66
Yearlong	0	0	0
Open	0	0	14,227.29
Unsuitable	0	0	0

MANAGEMENT ZONE 9

		18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
LEGAL DESCRIPTION	ACRES	A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T6S R69W																
Sec.19	80		X			X					X	X				
Sec.20	160		X			X					X	X				
Sec.28	360		X			X					X		2			
Sec.29	440		X			X					X		2			
Sec.30	244.40		X			X					X		2			
Sec.31	242.87		X			X					X		2			
Sec.32	480		X			X					X		2			
Sec.33	300		X			X					X		2			
T7S R69W																
Sec.6	643.89		X			X					X		2			
Sec.7	241.09		X			X					X		2			
Sec.18	285.66		X			X					X		2			
Sec.19	203.80		X			X					X		2			
Sec.20	80		X			X					X		2			
T4S R70W																
Sec.32	320			X		X					X				X	
T5S R70W																
Sec.4	41.49			X		X					X				X	
Sec.10	120			X		X					X				X	
Sec.14	160			X		X					X				X	
Sec.20	40			X		X					X				X	
Sec.28	40			X		X					X				X	
Sec.34	40			X		X					X				X	
T6S R70W																
Sec.7	40			X		X					X				X	
Sec.10	40			X		X					X				X	
Sec.12	240		X			X					X	X				
Sec.17	160			X		X					X				X	
Sec.21	40		X			X					X				X	
Sec.22	240		X			X					X				X	
Sec.23	160		X			X					X	X				
Sec.26	439.81		X			X					X	X				
Sec.27	109.92		X			X					X				X	
Sec.31	169.30		X			X					X				X	
Sec.33	40		X			X					X				X	
Sec.34	120		X			X					X				X	
Sec.35	40		X			X					X				X	
T7S R70W																
Sec.1	524.61		X			X					X	X				
Sec.2	248.10		X			X					X				X	
Sec.4	43.26		X			X					X				X	
Sec.6	121.36		X			X					X				X	
Sec.7	120.25		X			X					X				X	
Sec.8	440		X			X					X				X	
Sec.9	240		X			X					X				X	
Sec.10	440		X			X					X				X	
Sec.11	240		X			X					X				X	
Sec.12	80		X			X					X	X				
Sec.13	480		X			X					X		3			
Sec.14	560		X			X					X		2			
Sec.15;NW¼,W½NE¼	240		X			X					X	X				
Sec.15;E½NE¼	80		X			X					X		2			
Sec.18	163.49		X			X					X				X	
Sec.19	241.87		X			X					X				X	
Sec.20	80		X			X					X	X				
Sec.24	80		X			X					X		2			
T4S R71W																
Sec.30	197.88			X		X					X	X				
Sec.31	159.12			X		X					X	X				
T5S R71W																
Sec.5	40			X		X					X	X				
Sec.7	345.10			X		X					X	X				
Sec.8	160			X		X					X	X				
Sec.12	40			X		X					X	X				
Sec.14	120			X		X					X	X				
Sec.15	509.14			X		X					X	X				
Sec.18	40			X		X					X	X				
Sec.24	80			X		X					X	X				
Sec.25	40			X		X					X	X				
Sec.26	40			X		X					X	X				
Sec.28	120		X			X					X	X				
Sec.35	80			X		X					X	X				
T6S R71W																
Sec.1	313.95			X		X					X				X	
Sec.2	120			X		X					X				X	
Sec.10	80			X		X					X				X	
Sec.11	120			X		X					X				X	
Sec.17	280		X			X					X				X	
Sec.18	240		X			X					X				X	
Sec.19	359.60		X			X					X				X	
Sec.20	360		X			X					X				X	
Sec.22	40		X			X					X				X	
Sec.26	40		X			X					X				X	
Sec.28	320		X			X					X				X	
Sec.29	360		X			X					X				X	
T7S R71W																
Sec.1	160		X			X					X				X	
Sec.3	200		X			X					X				X	
Sec.4	80		X			X					X				X	
Sec.8	160		X			X					X				X	
Sec.9	200		X			X					X				X	
Sec.10	320		X			X					X				X	
Sec.11	200		X			X					X				X	
Sec.12	200		X			X					X				X	
Sec.13	80		X			X					X				X	
Sec.18	160		X			X					X				X	
Sec.19	40		X			X					X				X	
Sec.20	480		X			X					X				X	
Sec.22	80		X			X					X				X	
Sec.24	400		X			X					X				X	
Sec.25	80		X			X					X				X	
Sec.29	120		X			X					X				X	
T4S R72W																
Sec.20	40			X		X					X		3			
Sec.21	80			X		X					X		1/3			
Sec.22	400			X		X					X		1/3			
Sec.23	320			X		X					X		1			
Sec.24	200			X		X					X		1			
Sec.25	280			X		X					X		1			
Sec.26;NW¼NE¼	40			X		X					X		1			
Sec.26;NW¼NW¼	40			X		X					X		1/11			
Sec.27;NE¼SW¼	40			X		X					X		1			
Sec.27;N½N½, SE¼NW¼, SW¼NE¼	240			X		X					X		1/11			
Sec.28	160			X		X					X	X				
Sec.33;SE¼NW¼	40			X		X					X		1			
Sec.33;N½NW¼, SW¼SE¼	120			X		X					X	X				
Sec.34	40			X		X					X		1/3			
T5S R72W																
Sec.3	401.75			X		X					X		1/			
Sec.4	294.20			X		X					X		1/3			
Sec.12	80			X		X					X	X				
T6S R72W																
Sec.13	40		X			X					X				X	
Sec.15	240		X			X					X				X	
Sec.19	80.95		X			X					X				X	
Sec.20	40		X			X					X				X	
Sec.21	200		X			X					X				X	
Sec.22	200		X			X					X				X	
Sec.23	200		X			X					X				X	
Sec.24	160		X			X					X				X	
Sec.26	40		X			X					X				X	

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 9

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
Sec.28	80		X			X					X				X	
T7S R72W																
Sec.2	80		X			X					X				X	
Sec.3	75.64		X			X					X				X	
Sec.4	178.79		X			X					X				X	
Sec.5	111.96		X			X					X				X	
Sec.6	73.76		X			X					X				X	
Sec.7	114.50		X			X					X				X	
Sec.8	80		X			X					X				X	
Sec.10	80		X			X					X				X	
Sec.11	0		X			X					X				X	
Sec.17	240		X			X					X				X	
Sec.18	159.10		X			X					X				X	
Sec.19	160		X			X					X				X	
Sec.20	80		X			X					X				X	
Sec.21	40		X			X					X				X	
Sec.24	200		X			X					X				X	
Sec.25	320		X			X					X				X	
Sec.26	360		X			X					X				X	
Sec.27	200		X			X					X				X	
Sec.28	240		X			X					X				X	
Sec.29	40		X			X					X				X	
T6S R73W																
Sec.22	240		X			X					X				X	
Sec.23	40		X			X					X				X	
Sec.27	200		X			X					X				X	

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 10

14,958.94 acres

18. Locatable Minerals

	Potential High	Moderate	Low
Available	0	0	0
Concern Area	0	3,033.68	1,652.64
Closed	0	0	1,240

19. Salable Minerals

	Potential High	Moderate	Low
Open	280	320	0
Concern Area	4,686.32	0	0
Closed	760	520	0

20. Coal

	Potential High	Moderate	Low	None
Suitable	1,160	0	0	0
Open	0	1,203.54	4,930.01	0
Unsuitable	1,117.60	0	0	0
None	0	0	0	5,277.28

21. Oil and Gas

	Potential High	Moderate	Low
Standard	751.43	679.50	160
Seasonal	80	520	4,406.32
Yearlong	80	240	0
Open	0	0	0
Unsuitable	0	520	480

MANAGEMENT ZONE 10

LEGAL DESCRIPTION	ACRES	18 LOCATABLE			19 SALABLE			20 COAL				21 OIL AND GAS				
		A	B	C	A	B	C	A	B	C	D	A	B	C	D	E
T2N R62W																
Sec.32	160								X							
T7N R64W																
Sec.30	146.92								X							
Sec.32	160								X							
T4N R64W																
Sec.6	216.62								X							
T4N R65W																
Sec.12	120								X							
Sec.24	160								X							
T3N R65W																
Sec.4	80	X			X				X			X				
Sec.10 Offshore	80													X		
Sec.10 Onshore	80												S			
T4N R66W																
Sec.14	40			X			X				X	X				
T3N R66W																
Sec.10	160								X							
T1N R66N																
Sec.2	317.60									+						
Sec.24	160							X								
Sec.26;SW¼SE¼, NW¼SW¼	80									+						
Sec.26;E½E½,W½NE¼, NW¼SE¼, E½SW¼, SW¼SW¼	400							X								
Sec.28;SE¼SE¼	40									+						
Sec.28;NE¼SE¼	40							X								
T11N R67W																
Sec.6	40.42								X			X				
T10N R67W																
Sec.18	37.51								X							
T2N R67W																
Sec.22;NE¼	160									+						
Sec.22;NW¼	160							X								
Sec.25	40									*						
Sec.28;E½NE¼	80									+						
Sec.28;W½NE¼	80							X								
Sec.32	160									+						
Sec.34	160									+						
T1N R67W																
Sec.10	160							X								
Sec.20;E½NE¼	80									+						
Sec.20;W½NE¼	80							X								
T11N R68W																
Sec.26	320								X							
T10N R68W																
Sec.24	80										X					
Sec.30	311.43											X				
Sec.32	320											X				
T1N R68W																
Sec.1	80							X								
T2N R69W																
Sec.31	40											X				
T9S R63W																
Sec.14	40								X			X				
Sec.32	40								X							
T16S R64W																
Sec.13	40											X				
Sec.35	80	X			X						X	X				
T2S R65W																
Sec.4	160								X							
Sec.8	320								X							
Sec.32	320								X							
T8S R65W																
Sec.27	40	X			X				X			X				
T13S R65W																
Sec.12	120								X							
Sec.19	42.84								X							
Sec.29	80								X							
T17S R65W																
Sec.27	120	X			X						X	X				
Sec.28	40	X			X						X	X				
T2S R66W																
Sec.2	319.44								X							
Sec.12	160								X							
Sec.14	160								X							
T7S R66W																
Sec.6	40		X			X			X				!			
T8S R66W																
Sec.5	40	X			X				X			X				
Sec.26	40	X			X				X			X				
T12S R66W																
Sec.12	240			X			X		X					X		
T1S R67W																
Sec.14	40								X							
Sec.20	320								X							
Sec.22	40								X							

LOCATABLE SALABLE COAL OIL AND GAS

MANAGEMENT ZONE 10

LEGAL DESCRIPTION	ACRES	18 LOCATABLE A	B	C	19 SALABLE A	B	C	20 COAL A	B	C	D	21 OIL AND GAS A	B	C	D	E
T2S R67W																
Sec.9	40								X							
T6S R67W																
Sec.30	160.76								X							
T7S R67W																
Sec.11	40		X			X			X				1			
T9S R67W																
Sec.1	40.84											X				
Sec.3	40											X				
Sec.6	38.24											X				
T10S R67W																
Sec.7	80												1/4			
Sec.31	120		X			X					X		1			
T11S R67W																
Sec.1	40												1			
T14S R67W																
Sec.17	160	X			X						X	X				
T15S R67W																
Sec.14	480			X			X				X					X
Sec.23	520			X			X				X					X
Sec.35	320		X			X					X		1/4			
T16S R67W																
Sec.28	40												1/4			
Sec.30	526.80		X			X					X		1/4			
Sec.31	362.25		X			X					X		1/4			
T17S R67W																
Sec.6	243.59		X			X					X		1/4			
T1S R68W																
Sec.8	160								X							
T7S R68W																
Sec.17	40								X							
Sec.33	40								X							
T8S R68W																
Sec.8	160		X			X			X				1			
Sec.17	40		X			X					X		1			
Sec.18	369.04		X			X			X				1			
Sec.19	160		X			X			X				1			
Sec.20;S½SW¼, SW¼SE¼	120		X			X			X				1			
Sec.20;NW¼SE¼, SW¼NE¼	80												1			
Sec.28	40		X			X			X				1			
Sec.29	240		X			X					X		1			
Sec.30	402.34		X			X					X		1			
Sec.31	80		X			X					X		1			
Sec.32	400		X			X					X		1			
Sec.33	80		X			X					X		1			
T9S R68W																
Sec.1	40											X				
Sec.5	162.30		X			X					X		1			
Sec.27	40		X			X					X		1			
Sec.34	200		X			X					X		1			
T4S R69W																
Sec.29	160								X							
T5S R69W																
Sec.27	40								X							
Sec.34	40								X							
T7S R69W																
Sec.14	120		X			X					X		1			
Sec.23	360		X			X					X		1			
Sec.24	30		X			X					X		1			
Sec.25	30		X			X					X		1			
T2S R70W																
Sec.12	160								X							
Sec.14	160								X							
T4S R70W																
Sec.24	80								X							

LOCATABLE SALABLE COAL OIL AND GAS

GLOSSARY AND ABBREVIATIONS

Alternative - A distinct resource management plan that could be implemented.

Acquired Subsurface Estate - Subsurface estate legally acquired by the US government. Locatable minerals are excluded from the 1872 mining law, they must instead be leased.

BLM - Bureau of Land Management, Department of Interior.

BLM Administered Land - In combination all public land and all subsurface estate under BLM control.

CEQ - Council on Environmental Quality.

District - BLM administrative subdivision of the state headed by the District Manager.

DOW - Colorado Division of Wildlife, Department of Natural Resources.

EIS - Environmental Impact Statement.

Federal Land - Land that any federal agency administers.

FLPMA - The Federal Land Policy and Management Act of 1976.

Impact - A positive or negative result from mans actions. (also: affect or effect).

Land Tenure - Ownership or administrative status.

Legal Description - The legally accepted method of locating and describing land for identification.

Management Unit - A tract or group of tracts of public land within a management zone for which resource management is displayed.

Management Zone - One of 10 regions of the Northeast Resource Area.

Manager - The office lead of either a District or Resource Area.

Mineralization - There is identified value for mineral development, frequently based on past development.

Mitigation - A measure or method used to reduce or eliminate an anticipated impact. Frequently in the form of a contract stipulation.

MSA - Management Situation Analysis. This inventory analysis document was prepared to help develop the alternatives and is available at the Resource Area Office.

NEPA - The National Environmental Policy Act of 1969.

NERA - Northeast Resource Area.

NPS - National Park Service, Department of Interior.

OSM - Office of Surface Mining, Department of Interior.

Payment in Lieu of Taxes - (PILT) Federal payment to state or local governments based on ownership of federal land. PILT Act of 1976.

Preference Right Lease Application (PRLA) - Non competitive coal lease applications which were filed prior to 1976 for areas in which there were no known economically valuable coal deposits.

Preferred - The plan alternative which is presently and tentatively determined to be the best for implementation. Still subject to public comment and change.

Public Land - Land which the BLM administers both the surface and subsurface resources. (i.e. surface/subsurface estate).

R&PP - Recreation and Public Purposes. This act allows disposal of public land for these purposes.

Regulations - Management procedures as given by official Department of Interior printed rules based upon legal authority.

Resource Area - Administrative subdivision of the District. The smallest and closest to the ground office of the BLM.

RMP - Resource Management Plan.

S - Section. Used in legal description of land. An area of approximately 640 acres.

SCS - Soil Conservation Service, Department of Agriculture.

Split Estate - The ownership of legal rights are not wholely owned by one entity.

Stipulation - A condition or requirement included in a lease or contract. Usually in an effort to mitigate an impact.

Subsurface Estate - Land where the surface resources have been legally split from the subsurface resources and the BLM administers the subsurface or minerals only. e.g. oil and gas, coal, etc.

Surface Estate - Land where the surface resources have been legally split from the subsurface resources and the reference is to whomever administers the surface or above ground only. e.g. grass, trees, etc.

T & E - Threatened and Endangered species. There are federal and state designations (lists).

USFS - Forest Service, Department of Agriculture.

USGS - Geologic Survey, Department of Interior.

Withdrawal - The official restriction of certain specified land uses or actions to preserve or protect certain other specific resources or public uses. e.g. water power, recreational, etc.